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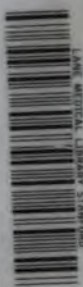
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## Part 1.

# THERAPEUTICS.

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## K O U M I S S .

BY DR. VICTOR JAGIELSKY.

THE value of milk as a dietetic medicinal agent has so risen, that there are already on the continent of Europe 150 special institutions in connection with its use. All these institutions employ milk in its normal states: whey, buttermilk, thick milk, etc.; but all these forms are inferior to Koumiss. In the steppes of Russia, between long. 55° 30' N. to 40° N., and lat. 40° E. to 79° 50' E., and bordered by the river Don and the lake of Baikal, consumption is unknown. The people are remarkable for their health and iron constitutions, and yet almost their only food and drink is Koumiss. The exemption of these people from phthisis is so remarkable as to have drawn the attention of the Russian Government. The result of the official investigation made was to settle the fact, that the health of the inhabitants is due chiefly to Koumiss. The origin of the name is unknown, but in the Tartar tongue it signifies "silver." True Koumiss is prepared from mare's milk by fermentation. It is a piquant, sweetly acidulous, fragrant liquor, which, when taken in very large quantity, produces a pleasurable excitement without bad after-effects. A distilled, highly intoxicating liquor, "*aracu*," is made from it in the East.









A  
YEAR - BOOK  
OF  
THERAPEUTICS, PHARMACY  
LANE LIBRARY  
AND ALLIED SCIENCES.

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meat for a time ; but grown people will rarely take it, although very often they are willing to take raw soup (Liebig's).

The symptoms developed under the use of milk are very interesting.

In no case have I seen any one gain weight during the first few days ; but where the treatment succeeds the patient soon ceases to lose, and then slowly gains, in weight. In three cases I find this record : The first lost in two weeks 14 pounds of a weight of 131 ; the second lost 18 pounds of 120 ; and the third, 11 pounds of 117, her total weight at the start. In another case, where the quantity of milk taken was two quarts daily, and the exercise small, the man lost weight steadily up to the time that I began to give bread, when the gain was immediate and speedy (case, diarrhœa). Mrs. S., æt. 47, weight 194 pounds, inactive, sallow, feeble, dyspeptic, and a very small eater, lost, in four weeks, 30 pounds, with general gain in strength and vigor.

The state of the skin has seemed to me to improve in old cases of chronic gastric or intestinal disease ; but in others there has been no change. The urine, in a few cases, is somewhat annoying during the first week, the patient having frequent calls ; but commonly no such complaint is made, although in certain dropsies I found the milk to act strictly as a diuretic. The changes in the urine we shall have occasion to study in future.

The tongue is very apt to become furred, and to remain white and rough for two or three weeks, and in some cases so long as milk is taken ; but so far is this from representing a disturbed state of stomach that the dyspeptic usually finds himself, after a few days, in the enjoyment of an amount of digestive comfort long a stranger to his viscera.

The stools begin to show the milk tint—a yellowish or salmon hue—after forty-eight hours, and when the milk disagrees they are apt to be loose, while usually they are intensely tough and constipated. This feature of the use of skimmed milk is at times most obstinate and annoying. After some weeks of creamless milk, I have often resorted, in such cases, to unskimmed milk, and with good effect ; but it is quite clear that even this, in adults, may constipate, as it never does in the child. Carel says that a little coffee in the morning is often sufficient to relieve the bowels ; and where a small cup of pure coffee can be used, this is true. I give it without sugar. Later in the treatment, fruit, fresh or stewed, may be used ; but, as a rule, I find that a little Saratoga water on rising, and a half-grain of aloes with a grain of ginger at night, will answer ; or, if these do not, then an enema is required. In some cases this symptom is simply unconquerable by any constant treatment, and twice it has forced me to abandon the milk

In another case—a lady who undertook the milk-cure unassisted—I was sent for on account of violent rectal and sciatic pain which followed every effort at defecation. She said she had had a daily stool, which was true, but the amount passed was trifling, and her rectum was packed with fæces so tough as utterly to defy injections until I had mechanically broken up the mass. The pulse is usually quickened until the milk-diet is large enough to sustain the weight unchanged, when it falls again. In certain cases of hypertrophied left ventricle, with palpitation of the heart, the immediate effect is to lower the pulse and quiet the heart. The nervous system is not strikingly affected by milk. I have once only, in a very stout and hysterical lady, seen vertigo and faintness follow its use and forbid its continuance; but, as a rule, it is in such persons soothing alone.

Carel makes no mention of one symptom of which many patients have spoken to me: this is an intense sleepiness. It is common, but not universal, and soon passes away.

In no case is the treatment of more value than in obstinate stomachic disease.

Dr. Mitchell then details a number of cases of stomachic disease, one of which we select as an example:—

Mrs. B., widow, æt. 33, had for years suffered from constant acid dyspepsia, for which she had been treated by several physicians, both at home and abroad. Her only relief consisted in the most careful choice of a minimum amount of food, and in the constant use of bismuth. She weighed 118 pounds, and was sallow and disfigured by an eczematous eruption.

During the first day of the milk-cure she took only one tablespoonful every two hours, and after this it was increased as I have described. In a week she was taking a little under a quart daily, and her weight was down to 114 pounds. A little whiskey was now added, and left off at the fifteenth day, when she was taking over two quarts of milk. The weight continued nearly steady up to the end of the third week, when she declared that even the perfect ease attained as early as the third day of the treatment was scarcely a compensation for the horrors of this exclusive diet. A little persuasion, however, enabled me to continue its use another week, when I began to give stale bread, and in a few days later venison. Her gain in weight from this time was strangely rapid, and five and a half weeks after we began the milk brought her up to 129 pounds, with a perfectly clear and spotless skin. The aloes pill and enema answered throughout to control her bowels.

It is now nearly a year since this time, but, despite her final abandonment of milk, she retains alike her good looks and comfort in digestion, having had in this time only one relapse, which yielded to a brief return to the diet.

Dr. Mitchell has not found the milk treatment of much value in nervous disease, except in certain cases of very obstinate neuralgia, which was probably connected with a weakened digestion. In the early stages of Bright's disease, he claims that very good results are obtained by it, and details several cases making good his assertions.

One case was that of a young lady, who had in May an acute attack of scarlatinal desquamative nephritis, and whose urine, in spite of intermediate treatment, in the following September was decidedly albuminous, with a sp. gr. 1014, and numerous fine granular tube-casts. She entirely recovered under the milk diet. The following case we quote in full, as affording a remarkable instance of the influence of altered diet and hygiene.

E. C., æt. 38. Early in 1863 he suffered from pain in the region of the right lobe of the liver, a pain nearly constant, but not very acute. It was regarded as rheumatic. Six months later a tumor appeared over and below the anterior portion of the seventh rib—the pain increasing as the mass enlarged. Ease was had only when the body was bent to the right side. After careful examination, this tumor was regarded by the patient and his surgical attendant as fatty—the pain being due to pressure upon the intercostal nerves.

January 7, 1864, the mass was opened by an incision, preparatory to its removal; about six ounces of glairy albuminous fluid escaped, and it was then determined to stuff the cavity with lint, as the patient, who had not been anesthetized, was unwilling to allow of the attempt at excision. Next day "irritative fever" set in, and soon took a typhoid type, with total suppression of urine, delirium, dry tongue, and the usual symptoms. The suppuration caused by the lint in the cavity continued up to July, 1865—two months after the buttermilk diet was begun—eighteen months from the time of the incision. During about four months of this time there was a sensation of heat over the renal region; the urine contained no albumen; but during January, 1865, he was suddenly attacked with diuresis, which came and went. In these spells there was albumen in the urine, and transparent tube-casts. He would often pass as much as twelve ounces of water every half hour. At this time I first saw him; the wound was suppurating, his pulse was 120—thirst excessive, incessant flow of strongly albuminous urine. Beneath the diseased rib, which was rough and carious, the whole of the organs seemed to be involved in a mass of inflammation. The liver dulness extended two inches below the navel in the centre, and on the right side to the crest of the ilium. The right lung was hepatized half-way up, and posteriorly the dulness was continuous into the renal region. The dejections were gray. There were several severe pulmonary hemorrhages, with cough and purulent expectoration. Under the free use of tinct. ferri chloridi he gained ground, the albumen lessening but not ceasing, and the urine diminishing in amount. In May of the same year, still excessively feeble and emaciated, he went to the country. He writes to me:

"At this time I weighed 127 pounds. On fine days I was assisted out into the sun, and left for some hours with a pail of buttermilk and a ladle. With these alone I supplied myself with my only food and drink, if I except six or seven lemons daily; and thus I lived for months. My salivary secretion was too scant to make a bolus. No gain took place in the character of the urine, but I gradually gained strength, so that I could go out without help. In two months I could carry a gun, and in two more the diuresis grew less, so that I had to rise only twice a night. Then I ceased to improve. I here thought I had been four months in the country, and that a trip to the impure air of the city might enable me on my return to gain ground again: I think I was right. On my return to the country I seemed to receive a new impulse, and my recovery was rapid. I then went periodically to the city, with, I think, great benefit. I still continued through the winter at a

hotel in the neighborhood, skating and gunning,—at the end of eleven months had gained eighty pounds. Strength fully restored; urine still albuminous." He spent the summer at the sea-side, and again returning to the country, remained there until January, 1867. He adds at this time, "I resumed my occupations, with still a trace of albumen in the urine. I then discontinued examining it for six months, when it had entirely disappeared. I believe I had albuminuria fifty months, and consumed in eleven months four hundred gallons of buttermilk."

I have seen Mr. C. recently, a very sturdy and vigorous man.

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### CLINICAL NOTES ON RELIEF OF NOCTURNAL DYSPNŒA ARISING FROM DISEASE OF THE HEART.

BY S. O. HABERSHON, M.D.

DR. HABERSHON divides these cases into three sets:—

No. 1.—Cases of failing power of heart's action from loss of blood and from sudden shocks to the nervous system. The action of heart is feeble, often irregular; pulse quick, irritable; first sound short, indistinct. The best treatment consists in administration of nourishment and stimulants, followed by iron, with, if there be sleeplessness or pain, chloral-hydrate, or chloroform, or, preferably to either, opium.

No. 2.—Cases of *mitral deficiency*, characterized by heart-murmur, irregular and small pulse, internal congestions, anasarca, etc. Stimulants and narcotics are here of little avail. The most effectual method of relieving the dyspnœa is by diminishing the tension on the right side of the heart, with the visceral congestions, by small doses of mercurials, by squill and digitalis, by diuretics, as the nitrate, bitartrate, and iodide of potash, by gentle but active purgatives.

No. 3.—Cases dependent upon failing muscular power of the heart. If congestions be present, they should be relieved by means just intimated. Stimulating narcotics should be used, as the spirit of chloroform, camphor, senega, ammonia, and Indian hemp; opium and hydrate of chloral must be used with great caution. Nervous excitement to be sedulously avoided. Starchy food should be abstained from at night, and temperature carefully guarded during the same period. The drugs available for relief are included in the following:—

*Opium and Morphia.*—These are less useful in organic than functional heart disease. The distress of the patient is often aggravated by them. The cardiac nerves are quieted, but the respiratory centres are narcotized, so that if the patient sleeps, he wakes up more distressed. The secretions are checked, and the heart's action thereby



embarrassed. Very small doses of morphia are, however, often useful in relieving excitement; large doses always tend to increase the pulmonary congestion and depress the heart's action.

*Digitalis* is often of great value. Its primary action appears to be that of a stimulant to the heart, and afterwards that of a sedative. Its influence is much greater on the cardiac than respiratory centres. Foxglove acts best in cases of imperfection of the mitral, where there is great irregularity of action of the heart, and is advantageously given with small doses of mercurials, squill, or saline diuretics. But while it often affords great benefits by regulating the pulse, relieving dyspnoea, and stimulating the kidneys, Dr. Habershon states: "I confess I always watch its free administration with fear, on account of the numerous instances of sudden and fatal syncope coincident with its employment in full doses."

*Conium and Belladonna* are useful when there is spasmodic contraction of bronchial muscular fibres, *i.e.*, where bronchitis or bronchial asthma coexists with the heart affection. Otherwise they are very uncertain.

*Stimulants*.—Alcohol, ether, chloroform, carbonate of ammonia, are useful by directly stimulating the cardiac nerves. Alcohol unfortunately increases congestion of the liver, and interferes with excretion. Chloroform and ether afford only very transient relief. The carbonate of ammonia in full doses is deserving of a fuller use than it generally has received. Ten or fifteen grains may be given in syrup, and both its primary effects and its secondary action on the skin and the glands are salutary. The aromatic spirit is less powerful.

*Camphor* is a cardiac stimulant, but its action is transitory and somewhat uncertain. It is especially useful where there is flatulent distention of the abdomen, and must be given in full doses.

*Senega* seems to exert a stimulant action both on the respiratory and cardiac nerves, and tends to lessen paroxysmal attacks of dyspnoea at night.

*Indian Hemp*. Dr. Habershon has found this drug very efficacious in promoting rest in cardiac disease. He states that both it and senega have acted in his hands very beneficially in many cases, and that they deserve a fuller trial than they have hitherto had. He thinks the hemp is better than opium, as affecting less the cardiac centres.

Chloral-hydrate induces, in numerous instances, calm, refreshing sleep; but where there is great dilatation of the heart, or weakness from degeneration of the muscular fibres, its employment is not without danger. In one case of distressing sleeplessness from aortic disease, with imperfection of the valves, twenty grains produced unconscious-

ness for twenty-four hours. In another case, forty grains only aggravated the symptoms. Where there is much pulmonary congestion its use is very hazardous, for, whatever may be the primary effect of chloral, its secondary effect seems to be that of a depressant, both upon the muscular fibre of the heart and upon the par vagum; and if sleep be not induced, the system becomes excited, the countenance flushed, the brain disturbed, and we have the semi-intoxicating effects of alcohol, without the benefit of its stimulating action. Hydrate of chloral is less valuable in cardiac sleeplessness than where there is no organic disease of the organs. As a rule, greater relief to cardiac dyspnoea is obtained by lessening the distention of the cavities of the heart, than by urging it to increased mechanical effort by the repeated administration of stimulants.—*London Lancet*, March 7th.

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### TRANSFUSION OF BLOOD.

DR. WIED BETZ details a case of a woman collapsing from anemia, due to repeated hemorrhages from the stomach and bowels, on whom he practised transfusion. But two ounces of blood were given, and in spite of all care two very minute bubbles of air were forced into the veins. The entrance of the air was instantly followed by profound collapse, but by the use of cold water and other restoratives the patient was soon revived.

The immediate effects of the transfusion were not very marked, but the woman commenced to improve very gradually, and finally perfectly recovered. After detailing the case, Dr. Betz describes the operation, and remarks upon it as follows. The operation may be described in four parts:—

1st. Preparation. The points to be attended to are—to have a good light; the two subjects to be operated on close to one another; two glasses standing in a basin of water at temperature of 29° R.; a bundle of fine, clean twigs; a fine piece of linen to strain the blood through after defibrination; a bistoury, scissors, thermometer, sponges, restoratives, cold water. Also, a stout double thread, and ear-sound, or De-champ'sche needle.

2d. Consists of baring and binding the arm as for venesection; choosing the largest vein; making an incision one and a half inches long parallel and down to it. If there be any bleeding it must be checked by cold, and the vein, as it lies in the centre of the cut, must be carefully dissected loose from the cellular tissue for about half an inch, and the double thread be passed under it. A cold-water compress should now be laid on the wound.

The 3d act consists in drawing five or six ounces of blood into one of the glasses, whipping it five to eight minutes with the bundle of twigs, and then straining it into the other glass.

The 4th act consists in placing the canula in the vein. The latter is drawn out of the wound by the threads—the bandage having been previously taken from the arm, and a V-shaped piece, two lines long, cut out of the vein with the scissors, or the vein cut half through. The canula or tube of the syringe is now introduced, it having been previously warmed and carefully filled with blood, so that no air may be contained in it (the point in this respect must be especially looked to). When the tube is inserted the threads must be tied around it tightly, so as to prevent any escape of the blood. Some use a Nussbaum's or conical canula, which itself fills up the vein and prevents any return of the blood.

The 5th act is the transfusion proper. The blood must be forced into the vein very slowly and carefully, always remembering the results of the introduction of a little air. The point of the warmed syringe should never be entirely emptied. If a refilling of the syringe is required the vein should be held just above the point of the canula.

The 6th act consists of placing a large wet compress over the wound, and binding it firmly by a roller bandage. Sticking-plaster and other methods of drawing the lips of the wound together should be eschewed, as conducive to phlebitis. After this description Dr. Betz makes some further remarks:

Woman's blood should always, if possible, be used in injecting into a woman, man's blood for a man, although, if necessary, this precept may be departed from. The blood should be taken only from a strong, healthy individual. Blood defibrinated by whipping is preferable to simple blood, unless time be so important that the few minutes occupied in preparing it are of consequence. If simple blood be used, it must be taken into the syringe as fast as it flows from the veins, as exposure to the air favors greatly coagulation. Dr. Braxton Hicks's suggestion that phosphate of soda be added to delay coagulation seems a good one.

Transfusion must not be put off too long, until death is, as it were, already sitting upon the lips. Although one to two pounds of blood have been used, yet such quantity produces so much systemic disturbance that it is better not to throw in more than eight ounces. If, as is often the case, the symptoms of prostration reappear some days after the operation, the latter should be repeated. It is better to use warm blood, but cool blood has been used with good results. After the operation absolute quietude of body and mind, and a supporting regimen, must be observed. If headache, anxiety, etc., follow the transfu-

sion, the patient should be quieted by hypodermic injection of morphia.  
—*Memorabilien.* Heilbronn, April, 1871.

## COLD-WATER TREATMENT OF TYPHUS FEVER IN THE NUREMBERG HOSPITAL DURING THE YEAR 1868.

BY DR. GOTTLIEB MERKEL.

DURING the year 41 cases were treated—18 men, 23 women. The cold full baths employed were at a temperature mostly 15° R., rarely from 18° to 20° R. The time of tarriance in them was ten minutes, and they were only used between 6 A.M. and 10 P.M.

They were used first on—

2d day.....	1 case.	8th day.....	4 cases.
3d ".....	5 cases.	9th ".....	1 case.
4th ".....	5 "	10th ".....	2 cases.
5th ".....	6 "	13th ".....	1 case.
6th ".....	8 "	14th ".....	2 cases,
7th ".....	1 case.	After 14th day.....	5 "

The average number was 33 baths to a case:—

10 baths or fewer in ....	6 cases.	51-60 in.....	3 cases.
11-20 " " " ....	6 "	61-70 in.....	2 "
21-30 " " " ....	9 "	71-80 in.....	2 "
31-40 " " " ....	7 "	97 in.....	1 case.
41-50 " " " ....	5 "		

The temperature was taken every three hours—in women in rectum, in men in axilla; and the cases were bathed when temperature reached 39° R. and 39.5° respectively. Scruple doses of quinine had not any fixed influence on temperature, sometimes apparently lowering it, sometimes giving only negative results. (Dr. M. says his experience in private practice is, that quinine is efficacious in protracting influence of bath in proportion to youth of patient.) Complications were abundant: bronchitis, six times; croupous pneumonia, once; pleurisy, twice; diphtheritis of pharynx, once, of nose and bronchia, once; parotitis, once; profuse diarrhoea, three times; intestinal hemorrhage, twice; menorrhagia, once; persistent albuminuria, twice; fugitive albuminuria, often; caries of rib, once; facial erysipelas, once; roseola and swelling of the spleen present in every case.

There were only two deaths, both men: one from profuse intestinal hemorrhage, on 15th day; the other from diphtheritic exudation, extending from nose into bronchial tubes. The first case did not come under treatment until 15th day, and was then cyanosed, and had very great delirium, intense heat, albuminuria, and pulse 120. The influ-

ence of the baths was scarcely perceptible on him, save by a fall of temperature. After death the heart muscle was well advanced in fatty, and the abdominal recti in waxy degeneration.

Delirium in all cases quickly subsided under the influence of the bath, except in one of the fatal cases, and in a boy 14 years old, who was originally taken with diphtheritic pharyngitis and albuminuria, developing on the fifth day well-marked typhus.

Involuntary stools were present at first in numerous cases, but quickly disappeared as delirium and coma subsided under the use of the cold baths, except in one case, in which they persisted after the mind became perfectly clear, and were finally cured by galvanism applied during convalescence to the paralyzed sphincter.

The occurrence of menstruation did not interfere with the regular bathing; but Dr. Merkel states that hereafter menorrhagia will be looked on by him as a counter-indication. In one woman, four months gone in pregnancy, the baths were used regularly and very successfully; she did not abort. In 21.9 per cent. of the cases there was a distinct relapse, which persisted from eight to seventeen days, and in which all the symptoms typical of typhus were manifested.

In regard to temperature, in no case was the effect of bath negative. In most of the cases the temperature fell from  $2^{\circ}$  to  $3^{\circ}$  (R. ?) and rarely  $4^{\circ}$ ; a result very different from that obtained by Ziemssen, by the use of baths gradually cooled. The fall of temperature obtained by him was much less, but was much more persistent. In most of the cases of Dr. Merkel the temperature would rise to the bathing point again in three hours, whilst under Dr. Ziemssen's plan, especially early in the disease, it was often six hours before the bath was again required. Dr. Merkel's experience is, that often-repeated baths, if only very *short*, are not very disagreeable to the patient, and agrees with that of Liebermeister, that frequently-repeated short baths are better than more seldom and longer ones, and that by far the greatest influence is exerted by the first few minutes of bathing. Also, that the sooner the baths are commenced the better is the prognosis, and the more effect produced by them, the more favorable are the auguries for the future. As to duration, in true typhus the doctor has not found the time very much shortened; but the chief end gained has been great lessening of mortality, and great immediate relief to the patient's distress.—*Deutsches Archiv für Klin. Med.*

ANTIPIRETIC TREATMENT OF TYPHOID FEVER.—Prof. Binz says: As soon as one of my patients had in the morning above  $101^{\circ}$  F., and in the evening above  $103^{\circ}$  F., he was placed during fifteen to twenty minutes in a bath of  $77^{\circ}$  F., and every second day he received, either in the morning or in the evening, fifteen, and in some severe cases twenty-

three grains of quinine. Prof. Binz claims that in the German Hospital the mortality has been reduced from 12 to 25 per cent. to 6.6 per cent. by this treatment, and states that if the bath be given in the morning and quinine at night, a very marked relief of the nocturnal delirium results.—*London Lancet*.

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## COLD-WATER TREATMENT OF TYPHUS FEVER.

BY DR. DRASCHE.

IN 1869 there were treated in the "*Rudolfshpitale*," in Vienna, fifty-five cases of typhus, with six deaths and forty-nine recoveries. So soon as the diagnosis was certain the cold-water treatment was commenced. In all cases the temperature by this time had risen to 39° C. and 40° C. in the evening, or the mercury rose higher. The maximum temperature observed was 41.5° C.—above 41° repeatedly in two fatal and three favorable cases. The length of sickness from entrance in hospital averaged eight days, three and twenty-seven days being the extremes. Nearly always the patients had entered upon the second week before coming to the ward. The convalescence was always favorable and without complication, excepting that in one case double suppurative parotitis was developed.

The water was used in half and full bath packings, and by pouring. The first day after the certain diagnosis the patient received, so soon as the thermometer marked in axilla over 35.5° C., a full bath from 25° to 29° C., which, by addition of cold water, was reduced to 10°. The baths lasted from five to fifteen minutes, and during this time the patient was rubbed off by assistants. The daily number of baths varied, seven being the maximum, and they were taken at all times of the day and night; when very high temperature, delirium, and restlessness manifested themselves, with unconsciousness, cold pourings of 18° to 6° C. were employed, especially if there was marked cerebral or bronchitic symptoms. Cold wrappers at 8° C. were used more seldom, owing to their producing so much exhaustion.

After baths the patients were wrapped in a sheet and put in a clean bed. If, after this, there were chilly feelings, the hands and feet were wrapped in warm cloths and the patient well covered. Between the baths ice was put to the head, to the breast if there was bronchitis, and to the abdomen, if diarrhoea. Plenty of fresh water was given the patients to drink. The bathing temperature was mostly 39.5° C., but when the face was very red, the tongue dry, and restlessness, unconsciousness, or delirium was present, the bath was employed, although the temperature was below the point alluded to. Barley-water, broth,

milk, and flesh-extracts were used for food. Of the six fatal cases one was moribund when brought in—one had Bright's disease. One died of intestinal hemorrhage. All had hypostatic pneumonia—one general peritonitis. In order to establish the action of the cold water upon the peripheral arteries and the heart, the pulse curve was taken by means of the sphygmograph at all times of day and at all temperatures, before and after the bath. The typhus pulse preserved its dicrotic character, notwithstanding the most energetic cooling. There was, however, a correspondence between the height of the second wave and the height of the temperature, and after the bath the second beat could sometimes not be detected by finger, though evident in tracings.

In cases of bronchitis the spirometer was often used. After cold affusions (*Begiessungen*) there appeared, early in the disease, an increase of vital breath power, amounting to 300 c.c. Later in the disease there was, after the cold bath or affusion, a great depression of lung power. The analyses of urine were made, but are not given in abstract from *Berichte des K. K. Rudolfspitale in Wiener Medicinische Presse*, January, 1871.

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### CHLORAL:

#### VIOLENT CONVULSIONS IN A CHILD—RECOVERY.

BY DR. JOSEPH G. PINKHAM.

THE child had measles, delayed eruption, intense congestion of lungs; relieved by eruption; retrocession of eruption at end of two days, followed by violent abdominal pain, then constant tetanic condition of muscles, with occasional clonic spasms. After failure of assafoetida, bromides, belladonna, warm baths, etc., chloral was exhibited. At this time respiration 100; bronchial tubes loaded with mucus; constant tonic or clonic spasms of nearly all the muscles, and apparently immediate death threatening. Two grains were given at dose; ten grains in first three hours; then two grains every half hour for a time, then once an hour. The symptoms gradually ameliorated, pain and restlessness disappearing; tonic spasms relaxing, clonic disappearing, signs of pulmonary congestion lessening. The chloral did not interfere with feeding or expectoration.—*Boston Medical and Surgical Journal*, March 17, 1871.

TRISMUS NEONATORUM.—Dr. Widerhofer, in the Children's Hospital, Vienna, has had six cases of recovery out of twelve treated by chloral. Previously he had lost all his cases. He gives the drug in dose of one or two grains by the mouth, or, when it cannot be swallowed, two and four grains by the rectum.—*The Lancet* (London), March 18, 1871.

**CHLORAL IN SINGULTUS.**—Dr. Leavitt, in *American Journal of Med. Sciences* for April, states that he has found five-grain doses of chloral to relieve the most obstinate hiccough, after the failure of all other remedies.

**CHLORAL FOR NOCTURNAL ENURESIS AND SPERMATORRHEA.**—Dr. J. Bradny, in *British Medical Journal*, April 8, 1871, praises chloral in these affections, giving details of cases which were speedily cured by exhibiting fifteen-grain doses taken at bedtime. Comparing the remedy with belladonna, he says—1. That the effect of belladonna is not so immediate, it frequently taking weeks to produce any marked control over the disease, whereas chloral is most rapid in its action, the first dose often controlling the affection. 2. Belladonna sometimes induces profuse diarrhoea, which chloral hydrate never does. 3. Belladonna has to be pushed to producing unpleasant optical symptoms. 4. Belladonna often fails.

**CEREBRO-SPINAL MENINGITIS.**—Dr. H. Sharp, in *New York Medical Gazette*, April 15, commends chloral in epidemic cerebro-spinal meningitis.

**CHLORAL IN CANCER.**—Dr. W. Cooke commends most highly (*Med. Times and Gazette*) the use of chloral in cancer. Where there is persistent suffering, ten grains three times a day—otherwise twenty grains at night—are the doses he has used it in.

**TREATMENT OF HOOPING-COUGH BY CHLORAL.**—Dr. F. Waterhouse (*Practitioner*, December, 1870, p. 344) recommends chloral in the second stage of pertussis, when the whoop is developed and the disease uncomplicated. To a child aged four years he gives five grains at bedtime. It must be used with great caution if pneumonic symptoms arise, for it has a tendency to cause lung-congestion.

**CHLORAL HYDRATE IN HYDROPHOBIA.**—In the *British Medical Journal* of May 6, Mr. Henry W. S. Ellis reports two cases of hydrophobia treated by chloral. The drug seemed to assuage the sufferings of the patients without affecting the result.

## SKETCH OF THE PRESENT STATE OF OUR KNOWLEDGE RESPECTING THE ACTION OF MERCURY ON THE LIVER.

BY DR. THOMAS E. FRASER.

DR. FRASER sums up present beliefs as—1. That mercury simply increases the flow of bile into the intestines. 2. That it causes an increased formation of bile, by removing abnormal conditions that interfere with the secreting function of the liver. 3. That it causes an



increased formation of bile, by an indirect action on the liver. 4. That it does the same by a direct and primary action on the liver. 5. That it has no cholagogue action whatever. Each of these doctrines are examined *seriatim*.

No. 1. Under this, Dr. Fraser shows, by quotations from numerous physiological and clinical authorities, that certain conditions of the alvine discharge indicate a more or less complete absence from them of bile, and, therefore, the probable existence of such derangements of the biliary apparatus as result in a more or less complete suspension of the flow of bile into the duodenum. By a similar series of quotations he next shows that "*mercury is able to restore to their normal condition alvine discharges, modified in such a manner as to indicate an absence or diminution of bile pigments; and further, that in various diseases accompanied with evacuations, whose characters denote absence or diminution of bile, the administration of mercury may be followed by removal of the symptoms.*" Then by numerous authorities he determines that "*healthy stools will undergo such changes after the exhibition of mercury as to indicate an increase of the bile constituents.*"

Dr. Stillé and others, however, assert that these changes in color are deceptive, due to the formation of a salt of mercury, which imparts the peculiar color. No chemical proof of this assertion is, however, forthcoming, and it is shown to be incorrect by the analyses of Golding Bird and Simon, both of whom failed to detect any mercury in calomel stools. In Simon's analysis the ethereal, alcoholic, and watery extracts of the dried stool all were stained by bile pigments, and bilin, while bilifellinic acid and biliverdin were found in large quantity. Michéa made a series of analyses of the fæces: 1. The spontaneous alvine evacuated of six healthy individuals—adult children—were examined by the nitric acid test, and gave no result. 2. Green evacuations passed by three patients affected with gastro-intestinal derangement were examined, and bile pigment was found in one case only, in which there was constant vomiting, and when this ceased bile could no longer be found. 3. Calomel was given to five healthy men and three women; in four of these green stools were produced, in which bile was readily demonstrable. 4. Saline and resinous purgatives were given to five persons; the evacuations were never or very rarely of a green color, and no bile could be detected. For this chemical evidence, Dr. Fraser only claims that so far from being opposed to, it strongly corroborates the clinical observation that mercury may increase the quantity of bile in the fæces. The increase of flow of bile into the duodenum may be due to the overcoming of some impediment; but as the nature or even the existence of such impediment is a mere matter of speculation, as

abundantly shown by the quotations given, the method of its removal is still more a matter of speculation, and we pass by the ingenious theories suggested.

*Doctrine No. 2* cannot at present be proven; but in hepatitis it is thought by some that mercury influences the inflammatory action, and thereby removes an abnormal interfering condition. Again, in the peculiar condition of the digestive apparatus known as "torpor of the liver," mercury is believed by some to cause the formation of bile by removing the congestion.

*Doctrine No. 3.*—It is conceivable that by irritation of the duodenal mucous membrane, mercury exerts a reflex action on the liver. Trousseau appears to have held such belief, but there is no evidence of its truth.

*Doctrine No. 4.*—There is as yet no direct proof of this, but Dr. Wares believes it is quite legitimate to maintain it as a possible or probable explanation of several of the observed facts.

Of the first four doctrines, then, the only one which can be recognized as established is that mercury increases the flow of bile into the intestines.

In regard to doctrine No. 5, the only proof at all of it is found in the experiments of Dr. Scott, and the very similar ones of Dr. Bennett. The general plan of investigation in these was to ligate and divide the common gall-duct, and then make a fistulous communication between the abdominal parietes and the gall-bladder. Afterwards the amount of bile eliminated was measured, both when calomel was given and when it was not. The objections to these experiments are: First. They have no direct relation to the only established clinical fact that the *flow of bile* into the duodenum is increased (*Doctrine No. 1*), as in such a manner the action on the secreting activity of the liver can alone be studied. It is apparent, also, that they do not really affect *Doctrine No. 2*, *i. e.*, that mercury increases the flow of bile by removing a pathological condition. The objections to allowing that the famous "Edinburgh Report" disproves that mercury causes an increase of the secretion of bile by a direct or indirect action on the liver are—first, In the operation certain nerves going to the liver were necessarily cut, and it is conceivable that this may have influenced the result. Second. Suppuration, irritation about the liver, absorption of bile products, all tended to produce an abnormal condition of the liver, which may have affected the action of the mercury. Again, it is well proven that bile is a necessity to proper digestion and assimilation, but the injurious effects which follow prevention of the flow of bile into the intestines were necessarily present in the experiments of Scott and Bennett. How far they modified the result is not apparent. In the

first place, a condition was produced in which normal vital processes, intimately and directly related to the secreting or excreting functions of the liver, were rendered abnormal, and then experiments of the most elaborate and careful description were performed in order to determine the influence of mercury on the excretory or secretory function.

In the discussion which followed this paper at its reading before the Medico-Chirurgical Society of Edinburgh, Dr. Gamgee stated that as one of the Edinburgh Committee, of which Dr. Bennett was chairman, he begged to state his opinion that the experiments had not conclusively proven that mercury does not act on the liver. The liver is the largest gland in the body, exercising various and important functions, and it was probable that the secretion of the bile was little more than the drainage of the large manufactory; that mercury did influence these acts was a clinical observation constantly repeated for ages, and it would be absurd to set up a few experiments upon dogs against such oft-repeated experience.

Dr. Bennett, in reply, said that experience had led to the use of the lancet for 4,000 years, although now we have learnt its injuriousness, and banished it almost entirely from practice; and that universal belief, as this shows, is no argument for the truth of a scientific problem. Drs. Wright and Liston called attention to the fact that spinach-colored mercurial stools can be produced without purging, as indicating that the bile is not merely hurried through the intestines. Professor Liston also bore testimony to the relief of other symptoms of deranged biliary action, such as clearing of the skin and urine, often effected by calomel.—*Edinburgh Med. Jour.*

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## THE ACTION OF MERCURY ON CHILDREN.

BY WM. STEPHENSON, M.D.,

PHYSICIAN TO THE ROYAL HOSPITAL FOR SICK CHILDREN.

DR. STEPHENSON, after calling attention to the fact that pepsin is often more useful than mercury in children in whom there is derangement of the alimentary apparatus, even when the latter is apparently more hepatic than stomachic in its origin, remarks in substance as follows:—There is a very prevalent error, that children are less susceptible to the constitutional action of calomel than adults. This opinion is based solely upon the difficulty of salivating young children. The truth is, children are more readily affected and more readily injured by mercury than adults. We have not salivation as a guide, but take another index. In syphilitic children I have frequently observed decided

results in six days from a grain of gray powder night and morning. Although this is a therapeutic rather than a physiological action, it yet indicates that the system is brought under the influence of the drug.

A smaller amount properly given will, however, produce very perceptible effects. Mercury produces in children a state of pallor, feebleness, sickness, and fretfulness, with green mucous evacuations. The result depends much upon the method of administration. The effect is produced in two ways: first, by the irritant action on the alimentary mucous membranes; and secondly, by the action on the system in general. Much of the depressing influence may be avoided by careful administration. Another effect is the production of anemia. This I regard a most important symptom to be watched for in the administration of mercury to children. If we take the depressing influence and the production of anemia, and not salivation, as our tests, we may affirm that children are at least as easily affected as adults by mercurials.

In simple intestinal derangements, where a healthy child is suffering from constipation, and passing white chalky stools, I have treated some such cases with mercury alone. The results have been: first, griping, without change in the character of the motions; then the passages are more frequent, softer, and mixed with green; then the mercurial motions proper are obtained, and continue for some days. Stopping the remedy; in favorable cases a return to healthy evacuations takes place, but very gradually, and seldom without some other remedial agency; in other cases, the old chalky motions again appear.

A dose of castor-oil, and proper regulation of the diet, will often bring about a more speedy result; and when compared with rhubarb and phosphate of soda, the action of mercury is far from satisfactory.

In cases where there is diarrhoea with copious white stools, mercury has seemed to do more harm than good. In the obstinate and protracted retching of a bilious attack, I have seen the vomiting arrested by a few grains of calomel. I employ it in some cases in robust children, where the vomiting is obstinate and the bowels confined, without a tendency to irritability of the mucous membrane. It should be given in full dose, and not repeated. While I would, then, limit the use of mercury in intestinal affections, I believe it of great benefit in certain constitutional affections. In infantile syphilis I have the greatest confidence in it. Experience has taught me that in cases where I have sought to produce change by the use of the iodide or other preparation of potassa, but signally failed, I have succeeded by administering mercury.

Dr. STEPHENSON believes that in syphilis mercury acts not on the blood, but upon the tissue cells, and that it does not cure syphilis by

removing the diathesis, but by modifying the results of the diathesis; and hence, in a strict sense, it does not cure syphilis.

His experience teaches him that mercury acts most beneficially in the sluggish constitutions of strumous and syphilitic diatheses, and most injuriously in the tubercular diathesis. His conclusions are as follows:—

1. Mercury may be employed to influence the constitution with perfect safety, and without any injurious effects on the general health.

2. That to obtain its therapeutical action it is not necessary to produce its visible physiological action, and that it becomes injurious so soon as these are manifested.

3. That in children its injurious effects are as easily induced as in adults, but must be looked for in its depressing influence and deterioration of the blood.

4. That it should be only used to stimulate nutritive changes, not to alter the blood, and that it should be administered occasionally and at intervals, not continuously.

5. That its use in modifying acute inflammatory action is very limited, but that there can be no question as to its power over the products of inflammation, in starting the processes of resolution and absorption.

6. That no amount of abuse of the medicine can in any way invalidate the results of its effects when it has cured where other remedies have failed, or lessen in any measure the position which I here defend of a judicious use of the medicine. — *Edinburgh Med. Jour.*

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## ON THE EFFECTS OF CONIUM IN NERVOUS AFFECTIONS.

BY DRS. M. GONZALES ECHEVERRIA AND A. E. MACDONALD.

THE especial object of this paper is to call attention to the value of conium in epilepsy and similar convulsions. Details of a number of cases are given, but of these we can only mention particularly that of an infant, six days old, suffering from most violent convulsions, consequent upon chronic hydrocephalus.

Every remedy proved powerless to arrest even temporarily the convulsions and to quiet the infant, excepting the succus conii (from William Ransom, Hitchin, near London), at first ten minims every two hours, gradually increased to one fluid drachm every two or three hours, until the convulsions would discontinue with the appearance of nar-

coti<sup>c</sup> effects of conia. Among the immediate changes noticed when the infant took twenty minims of the succus every two hours, were a lessening of the fits, with regular evacuations of the bowels, and an excessive secretion from the kidneys, urine being passed almost every hour. The frequency of the pulse and respiration decreased, the skin became cool, and the infant would sleep for five or six hours, free from fits and screaming, and with the limbs quite relaxed. A second or third drachm of the juice, exhibited two or three hours after the preceding, would show very strikingly the deficiency of the peripheral circulation, the pulse at the same time being much more frequent, but weaker, respiration hurried and irregular, and the hands and feet cold and bloodless. The pupils would become greatly dilated, with perceptible strabismus, the face flushed, the tongue dry, and the infant, when sleeping soundly, would be observed at times to move the lips and mouth in an automatic manner, as though sucking, or would be seized for a while with hiccough or vomiting—these two last-mentioned phenomena always before the production of complete narcotism. In addition, the bowels would act but rarely, and the fæces, white and hardened, would, on their passage, give the infant great pain. The maximum of succus conii ever employed was three fluid drachms within twelve hours, and the succus was administered in this manner, with occasional intervals, for several weeks. The infant, however, died in a severe fit, at a time when he was apparently less distressed, and had not taken the juice of hemlock for over a week.

The authors have also used the remedy in chorea, hemiplegia, locomotor ataxia, and myelitis, with the result of obtaining quiet and sleep. To obtain effects, full repeated doses must be used. It generally requires half an ounce of the English juice, or half to one drachm of Squibb's fluid extract, to influence decidedly the nervous centres. Sometimes much larger doses are necessary. The utmost effect becomes manifest in from twenty to thirty hours after these amounts have been taken.

The operation of conia lasts from two to six hours, and then disappears, leaving no other traces than a sense of diminished muscular energy, in a few instances accompanied by nausea or hiccough, and more frequently by a burning sensation on urinating, both of which phenomena are of short duration.

It is important that we should remark—and in this our observations corroborate those already made by Harley—that the weaker and more inactive the epileptic is, the larger will be the quantity of conium required to affect him as a narcotic. And it is striking, as further asserted by Harley, that conium really operates as a tonic upon the muscular system. In this respect conium, when not carried to

the degree of paralyzing the muscular power, resembles in its action cod-liver oil. The fact is quite remarkable with epileptics taking three or four drachms of the juice, or thirty minims of Squibb's fluid extract, three times daily, for the irritability of the spinal system gradually diminishes, with notable improvement in their bodily condition. This tonic effect of conium is no less obvious in myelitis. We have in no case noticed that conium interferes with the sensory functions.

We have found the pulse regular throughout the operation of conium, but not of undiminished force and volume, as stated by Harley. Our observations lead us to believe that conia, from its special influence on the pneumogastric nerve, operates on the innervation of the heart with paralyzing effect, the internal sensibility of the organ being affected through the depressor nerve, or sensitive cardiac branch of Cyon, which accounts for the bloodless condition of the limbs, from contraction of the peripheral blood-vessels, when the full action of conium is produced. Conium, therefore, differs from bromide of potassium, which operates in a paralyzing manner mainly on the vaso-motor nerves. We are satisfied that the sympathetic system is primarily involved in the production of epilepsy, circulation being thereby deranged from the inception of the disease. Hence the advantage which may be derived from the judicious employment of remedies like bromide of potassium and conium, operating chiefly on the motor nervous tracts and the innervation of the whole circulatory system. We look upon cerebral anæmia, due to excitation of the arterial nerves, as the initial link in the chain of epileptic phenomena. The confusion generally made between hyperæmia and congestion explains why cerebral hyperæmia may be still considered by some writers as an etiological factor of epilepsy. Hyperæmia is a physiological phenomenon of short duration, depending upon stimulus and greater action of the venous system, whereby the flow of oxygenated blood is accelerated; whereas congestion is, on the contrary, a morbid phenomenon, the result of vascular paralysis of more or less permanency, and causing stagnation of the blood. Although the capillaries overflow, as we may say, in either case, hyperæmia is of such a transient nature that it cannot induce structural changes, which are, however, the necessary consequences of congestion. Excitation of arterial vaso-motor nerves causes anæmia, but such excitation, as just observed, is momentary; and, if prolonged, it soon paralyzes the arterial walls, congestion following thereon. It suffices, therefore, to bear in mind such teachings of the physiology of the circulatory systems, to understand how cerebral congestion must be, and is, so intimately associated with epilepsy, notwithstanding the occurrence of anæmia at the very onset of the

epileptic paroxysm. The one—anaemia—is the initial, the other—congestion—the consecutive phenomenon of epilepsy; both originating in a derangement of the sympathetic system.—*Medical Times*.

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### ON THE CORRECTIVE INFLUENCE OF BROMIDE OF POTASSIUM ON OPIUM.

BY J. M. DA COSTA, M.D.

DR. DA COSTA in this paper states that he has had very great success in the conjoint use of bromide of potassium and opium, in those cases in which the latter drug cannot be taken alone. He gives two or three twenty-grain doses—one half an hour before the narcotic, the other three hours afterwards, or sometimes a larger dose with the opium. He has used the combination in a large number of cases; in one which he gives as a specimen, the patient herself said in a note: "I have been sending my thoughts back to the time when opium was my horror, and severe pain as easy to bear as its effects. If the pain was relieved, the faintness would return after twelve, fifteen, or even twenty-four hours from the time of taking the opium. Now, on taking twenty grains of the bromide one-half hour before a dose of the watery extract, and again in about two hours, I am pretty secure. The *more bromide* I take, the *sooner* do I get to sleep after a dose of opium. Two doses (20 grains each) are not enough to counteract the exciting effects and procure sleep under five or six hours from the time of taking." The faintness from opium is the phenomenon most markedly prevented. Next in readiness of being influenced stand the headache, vertigo, and nausea; then the itching of the surface and dry mouth. In some cases the bromide fails to have any corrective influence.—*American Journal Med. Science*, April, 1871.

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### TREATMENT OF INFLAMMATION OF LIMBS BY CUTTING OFF THEIR MAIN ARTERIAL SUPPLY.

BY DR. S. W. GROSS.

In this paper Dr. Gross first details a case of intense sub-aponeurotic inflammation of the hand, in which he was forced to take up the brachial artery for bleeding from incisions made by the surgeon.

Up to this time (he says) there had not been any considerable diminution in the severity of the local symptoms, and the gangrene now involved the third and second phalanges of the ring-finger. On the following morning I found that the swelling had declined and that the



pain, heat, and purulent discharge had also diminished. In the course of a week the hand had regained almost its natural size, and a distinct line of demarcation had formed on the proximal side of the first phalangeal articulation. Ten days later I removed the offending finger at its metacarpal junction, and in a few days more the cure was perfect.

After giving a history of the subject, he recommends manual compression of the artery as a safer, less serious, and equally effectual method as the ligature. In 1867 Professor Vanzetti, of the University of Padua, proposed digital compression of the main artery for the cure of phlegmonous or articular inflammation of the extremities, and detailed two cases as illustrations of the efficacy of this treatment; one being an instance of bad phlegmonous erysipelas of the arm, cured by compression of the subclavian artery, and the other a case of acute arthritis of the wrist, successfully managed by compression of the brachial artery. So manifest have been the advantages derived from manual compression that it now forms the ordinary means of treating such cases at the Padua clinic. It need not be continuous, and the patient may be taught to exert it himself. In general it need only be maintained for eight or ten minutes, and, after resting, again resumed. Professor Nélaton, in a case of inflammation of the hand after a lacerated wound necessitating amputation of a finger, obtained good results from compression of the brachial artery.

The same principle of practice has been carried out in other ways. Thus Mr. Jackson, of the Sheffield Hospital, subdued an inflammation of the knee-joint, consequent upon punctured wound, by compression of the femoral artery with a tourniquet for forty-eight hours; but the disadvantage of the use of an instrument is obstruction to the venous return. The *Lancet*, December 7, 1867, has briefly noticed "a case of severe traumatic inflammation of the hand, under the care of Mr. Moore, at the Middlesex Hospital, in which the compression of the artery was procured by acupressure. The treatment here was quite successful."

Upon the whole, manual compression is to be preferred to other measures which have for their object the arrest of the circulation in badly-inflamed parts.—*Medical Times*.

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#### ON THE ACTION OF ACONITUM NAPELLUS.

DR. CHAS. DOUGLASS PHILLIPS, in a paper with this title in the *London Practitioner* for April, commends the use of aconite in the early stage of simple inflammatory fevers, whether parenchymatous or membranous in their causal lesion. He thinks it has no effect upon

exudation already thrown out, but, by preventing congestion and reducing action, prevents its formation or increase. He states that he has kept notes upon five cases of pneumonia and pleuro-pneumonia treated by the drug. The age of the patients varied from 20 to 60, the pulse from  $110^{\circ}$  to  $140^{\circ}$ , the temperature from  $102^{\circ}$  to  $105\frac{1}{2}^{\circ}$ . In all cases the febrile reaction and physical signs of commencing sthenic pneumonia were present. In no case did the fever last more than six days; in five it left in forty-eight hours. In all these the temperature fell to  $99^{\circ}$  when the pulse fell, but sometimes the latter remained very frequent after the former had returned to its normal position.

In from three to six days after the temperature had fallen to  $99^{\circ}$ , the lungs had become perfectly normal. In eleven cases of pneumonia in which the stage of consolidation had been reached before coming under care, the aconite seemed of no use.

In apoplexy, tonsillitis, in asthma, whenever the pulse is full and strong, and the system plethoric, aconite is of value. The drug has without doubt a paralyzing action on the heart, and must be avoided whenever there is a tendency to syncope and a feeble pulse, pale skin, etc.

In palpitation dependent upon simple cardiac hypertrophy it is very valuable, but is very dangerous when the valves are diseased so as to admit of regurgitation.

In sudden arrest of the menses by cold, aconite is of the utmost value. The body must be kept warm to favor perspiration, and one drop every half hour to hour is generally quite sufficient to bring on the flow within from four to eight hours.

Five cases of puerperal peritonitis have been noted. In two the attack commenced on the third day after delivery, and in three on the second day. With two the pulse rose to  $140^{\circ}$ , temperature  $105\frac{1}{2}^{\circ}$  to  $105\frac{1}{2}^{\circ}$ . In three, pulse  $120^{\circ}$  to  $135^{\circ}$ , temperature  $103\frac{1}{2}^{\circ}$  to  $104\frac{1}{2}^{\circ}$ . From the time of the rigors until the temperature fell to  $99^{\circ}$  nothing was given but aconite and castor oil *pro re nata*. All five recovered. Poultices with laudanum were used extensively.

In puerperal convulsions and mania, with high arterial excitement, aconite is of value, with aid from the lancet when necessary.

In dysentery, in erysipelas of sthenic character, aconite has been found very useful. In typhus and typhoid fever an extensive trial has shown that it is of no use.

Aconite should always be given simply in water, in single or two-drop doses every half, one, two, or three hours, according to the severity of the case. In very acute cases it may be given every fifteen minutes.

### SOME FURTHER ADDITIONS TO THERAPEUTICS; ORGANIC BROMIDES, METACHLORAL, WITH A NOTE ON SULPHUR ALCOHOL.

At the meeting of the Medical Society of London, March 13, Dr. Richardson read a paper with the above caption. After some preliminary matter, he introduced some new medicinal bromides, viz., bromide of quinine, bromide of morphia, and bromide of strychnine, and some of their combinations. These bromides are best administered in syrup of the strength—in regard to quinine, 1 grain; morphia, one-eighth of a grain; strychnine, one thirty-second grain—to the fluid drachm: in compound syrups the same proportionate doses should be maintained. Dr. Richardson had found the bromide of quinine of great use in syphilitic ulceration; also bromides of morphia and quinine, frequently repeated, in neuralgia; and in a case of diabetes the compound syrup of bromides of quinia, morphia, and strychnia had been signally successful. Dr. Richardson also showed a specimen of pure anhydrous chloral, and suggested it as a fluid caustic; it abstracts water rapidly, and might be of use in cases of soft fungous growths. A specimen of metachloral was then shown—an insoluble white substance made by exposing chloral hydrate to sulphuric acid. It is isomeric with chloral, and when treated with an alkali is resolved into chloroform and chlorate of the alkali. Administered to inferior animals it seemed to act as a gentle narcotic. Dr. Richardson lastly exhibited a specimen of mercaptan, sulphur alcohol ( $C_2H_5S$ ), in which sulphur replaces the oxygen of ordinary alcohol. He stated that when taken even in minute quantities it produced great mental depression. This alcohol is exhaled by the breath, to which it imparts a peculiar odor, similar to that met with in wasting diseases. From this the doctor suggested a new line of research in diagnosis, viz., the detection of organic sulphur compounds derived from the blood in the air expired by the lungs by diseased persons. Sulphur compounds liberated in the alimentary canal seemed harmless—i. e., were not absorbed—but it was now quite certain that when some of them are actually introduced into the circulation, even in minute quantities, and are diminishable by exhalation from the lungs, they produce muscular debility, feebleness of the heart's action, and mental depression. We may therefore infer that the formation of sulphur compounds within the circulation from disease might account for some examples of excessive temporary prostration, for the cause of which we have as yet no satisfactory explanation.—*Medical Times and Gazette*, April, 1871.

## TETANUS.

*Case*, following severe injury to face by explosion of gunpowder, reported in *London Lancet*, p. 154, 1871, treated with chloral. Fatal. Chloral eased suffering by procuring sleep and rest; 770 grains taken in eleven days.

Also, *fatal traumatic case*, treated by calabar bean, in a boy, æt. 11.—*British Medical Journal*, March, 1871.

*Case with recovery*, in *British Med. Jour.*, March 11, 1871, in a boy, æt. 6; treated with hydrate of chloral.

*Death* on the eleventh day, in a boy, æt. 5; treated by chloral.—*Med. Times and Gazette*, p. 246.

*Recovery*. Boy, æt. 11; disease apparently idiopathic; treated by chloral.—*Pacific Med. and Surg. Journal*, April, 1871.

*Recovery*. Boy, æt. 10; calabar bean; traumatic.—*Philad. Medical Times*, Jan., 1871. !

*Recovery*. Man, æt. 26; traumatic; treated by calabar bean.—*Philadelphia Medical Times*, March, 1871.

*Recovery*. Boy, æt. 11; idiopathic; treated by chloral.—*Pacific Medical and Surgical Journal*, April, 1871.

*Recovery*. Two cases. One treated with nitrite of amyl alone; one with it and chloral.—*London Lancet*, p. 572, 1871.

## CHLOROFORM DEATHS.

IN a discussion in the Medico-Chirurgical Society of Edinburgh, following an account of a sudden death from chloroform by Dr. Gillespie, Dr. Geo. W. Balfour mentioned the case of a lady who had taken chloroform very freely in eight or nine successive labors, remaining at one time under its positive influence twelve hours, and had also taken it safely for extraction of teeth, but who finally died from it, having on the last fatal occasion taken not more than a drachm. Dr. Fraser called attention to the importance of the form of electrical current used in resuscitation. He said that in cases of arrest of heart's action, the interrupted current ordinarily employed in this country only served to render the arrest permanent; but Ominus and Legros had shown that the constant current could restore the cardiac action of a warm-blooded animal which had been arrested one or two minutes, or for one or two hours in a cold-blooded animal. Moreover, if the current were passed from above downwards, there was no marked action; but if passed from below upwards, the action was immediate and remarkable.

Dr. Argyll Robertson stated that in the ophthalmic wards of the Royal Infirmary they had found the administration of two ounces of brandy just previous to the production of anæsthesia very useful in preventing chloroform vomiting.—*Edinburgh Medical Journal*, May, 1871.

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### BICHLORIDE OF METHYLENE.

MR. CHARLES GAINÉ commends most highly this anæsthetic, stating that he has had a large experience with it. When Mr. W. R. Wood's inhaler is used and improper access of air denied, the effect is all that could be desired, perfect anæsthesia being established in from twenty seconds to two minutes. The inhaler consists of a hollow cylinder made of thick leather, about five inches long, and shaped at one end to the nose and chin, the other end having small holes punched in it for admission of the air. It is necessary to have three sizes, to guarantee exact fitting of the inhaler. A flannel bag hangs loosely within the cylinder, on which the methylene is sprinkled. The following rules should be strictly observed:—Abstinence from food and stimulants of every kind should be insisted on for from three to four hours beforehand; all garments should be loose. The patient being either in the recumbent or semi-recumbent position, forty minims should be sprinkled on the flannel bag, and the inhaler be then applied very closely. A slight choking sensation will be at first apparent, which passes off rapidly; if not, remove the inhaler for an instant. In from half a minute to a minute anæsthesia of eyeball is complete, and the operation may be begun. Remove the inhaler entirely until symptoms of returning consciousness are seen, when the inhalation may be renewed with half a drachm of the bichloride. From forty minims to two drachms and a half will be required, in accordance with the length of the anæsthesia. Recovery is almost immediate and complete.—*Medical Times and Gazette*, Feb. 25, 1871.

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### DEATH FROM BICHLORIDE OF METHYLENE.

IN the *Pharmaceutical Journal and Transactions* is an account of a death which occurred from this anæsthetic at Charing-Cross Hospital, in the service of Mr. Ewin Cantoir. The man had a finger amputated on account of an injury. One and a half drachms (half the usual quantity of the methylene), were administered by the regular administrator of the hospital. The operation was performed as soon as insensibility was induced, and lasted not more than a minute. At

its close it was noticed that the head had fallen on one side, the eyes were upturned, and breathing and pulsation ceased. Every effort was made to restore animation, but without success. Upon a post-mortem examination all the organs were found perfectly healthy, "the heart and brain, the organs usually affected by chloroform, not presenting any traces of the action of the anæsthetic."

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### USE OF STOMACH-PUMP IN DISEASES OF THE STOMACH.

DR. WM. PEPPER, in the *Philadelphia Medical Times*, after detailing a case of cancer of the pylorus, in which the daily emptying and washing out of the stomach by the stomach-pump had afforded the most marked relief to the patient, remarks as follows:—

The next point of interest is in connection with the employment of the stomach-pump in the treatment of this case. The use of this means in the treatment of dilatation of the stomach was introduced by Kussmaul, of Freiburg, in 1867.\* The case in which he first employed it was one of dilatation of the stomach, probably depending on ulcer near the pylorus, in which there was frequent vomiting, burning in the stomach, emaciation, and exhaustion. After the stomach was emptied, Vichy water was thrown in, and again removed by the pump, so that the organ was thoroughly washed out. For two days following the relief was complete, and the symptoms, when they returned, were again relieved by a similar procedure at intervals of two or three days. In a fortnight the patient had improved so remarkably that she might be described as a different person. In two months she had gained fifteen pounds in weight, and ultimately recovered completely.

Several other cases have since been recorded in which the employment of this mode of treatment has been followed by permanent cure of dilatation of the stomach. The advantages which are gained by the evacuation of the contents of the stomach at suitable intervals in such cases are evident. The retention of the food in the stomach is speedily followed by fermentative and putrefactive changes, while the accumulating contents constantly increases the dilatation. It is true that frequent vomiting is usually excited, but it fails to empty the viscus. Thus, in the case here recorded, over four pints of fluid were withdrawn from the stomach the first time the pump was used, al-

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\* *Deutsches Arch. f. Klin. Med.*, December, 1869. For an interesting synopsis of the views of Kussmaul and of those who have employed this mode of treatment, see *Dublin Quarterly Journal of Medical Sciences*, November, 1870, p. 390.

though the patient had taken but little food for some days preceding, and had vomited occasionally during that time. The presence of this accumulation of indigestible fermenting fluid must cause great distress by its local action on the gastric mucous membrane, while the general nutrition suffers rapidly and severely, because all food taken into a stomach with such contents must speedily undergo fermentative changes without being at all digested.

In cases of scirrhus of the pylorus this treatment can of course only be palliative; and yet in many patients with that disease I am satisfied that several of the worst and most annoying symptoms depend on the constant presence in the stomach of fermenting and decomposing food, the action of which is to utterly prevent digestion, and to distend and dilate the stomach so as to impair its propulsive power. The hypertrophy of the muscular coat of the stomach, which is often developed in scirrhus of the pylorus, does something to compensate for this, but cannot neutralize the evil effects; and it appears clear both that the patient's sufferings are increased and his life shortened by the existence of this state of the gastric contents.

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### MILK IN DIABETES MELLITUS.

A. S. DUNCAN, M.D. (*Lancet*), strongly advocates the treatment of diabetes with skim-milk exclusively. In the first place, the milk diet is not objected to by the patient, but is relished, especially at the outset, when the thirst is excessive. The milk is as far superior to the meat diet as this was to any previously used; but it must be persevered in methodically and exclusively until convalescence is established. The use of milk for twenty-four hours will produce marked improvement; the quantity and density of the urine will fall, thirst and voracious appetite will disappear, the skin becomes moist and perspiration is re-established, the troublesome nervous symptoms are abated, and refreshing sleep succeeds to the previous sleepless, restless condition, rendered intolerable by the incessant thirst. In two cases recorded this rapid improvement was noted. In another case, on the same treatment, at the end of three days, and with no other remedy, the urine fell from twenty-three pints, sp. gr. 1038, to six pints. The other prominent symptoms of the disease also underwent a like rapid change for the better. The sugar of milk is altogether innocuous in the disease, as has been shown by experiment. It supplies the system with a saccharine, proximate elementary principle, equivalent to such as vegetable food affords. The sugar of milk is destined to supply, for the nutrition of the young, an equivalent for the amylaceous and saccharine

principles of the food of adults. Sugar in moderate quantities is not injurious in diabetes. It cannot be again converted into sugar by any morbid process in the liver or elsewhere, and hence cannot furnish a pabulum for the elaboration of diabetic sugar. The success of the milk treatment shows that in this disease it is not necessary to restrict the amount of fluid taken by the patient; the thirst bears a definite relation to the quantity of sugar voided, and subsides as the latter is reduced. All the patients Dr. D. has treated were kept wholly on the use of skim-milk until convalescence had been for some time established, when lean meat and green vegetables were added for dinner. Two cases of Bright's disease are also recorded, in which the skim-milk treatment was used with excellent results.

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### TREATMENT OF CROUP.

GLYCERINE INHALATIONS IN CROUP.—During 1869 there was an epidemic of measles, with a tendency of croup, at Mannheim, and twenty cases came under the care of Dr. S. Of these, three were treated by leeches and emetics, the remainder simply by inhalation of glycerine, because the former treatment was without result. The inhalations were continued fifteen minutes, repeated every two to three hours, and were generally given until the ninth day. All these cases recovered. That most of them were true pseudo-membranous croup was shown by the throwing off of false membrane.

In cases of non-membranous or false croup the cough and symptoms were relieved. The inhalations were given by means of a small Siegle steam apparatus, care being taken to avoid too hot a flame, as a disagreeable fatty odor was otherwise generated.—*Journal für Kinderkrankheiten*, p. 92, 1871.

SULPHUR IN CROUP.—Dr. Lanini, in *Lo Sperimentale*, of Florence, of December, 1870, writes that he has treated membranous croup successfully with powdered sulphur in doses of a scruple every two hours. He reports a case occurring in a girl of eight years, where all other remedies with which he was acquainted had failed to give relief. After the second dose of sulphur, the dry cough was diminished, and she soon began to expectorate casts of the bronchial tubes, some of which were nearly an inch in length. The treatment was continued two days, and the patient did well. The doctor was induced to try the remedy in consequence of the experiments and recommendations of Doctor Banieri Bellini, Professor of Toxicology in the Royal Institute at Florence, published in the September number of the *Sperimentale* of 1869.



**BROMIDE OF POTASSIUM IN CROUP.**—Dr. S. B. Rieffer commends most warmly the bromide used internally and by atomization of its solution in membranous croup. He combines the chlorate of potash with it, and recommends it also in other simple throat inflammations.—*Philadelphia Medical Times*

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### ON THE THERAPEUTICS OF DIPHTHERITIS.

DR. STEINER in this paper especially gives the result of local applications. Internally the cases received chlorate of potash and quinine when thought necessary. The remedies were applied as inhalations, gargles, etc.

1. *Lime-Water* in fourteen cases. Nine recoveries, five deaths. The solvent power of the lime-water was very marked, the membrane disappearing in six to eight hours. The re-formation of membrane was not prevented, and the lime-water failed to limit the disease to the mouth, and to prevent the formation of membrane in the larynx and throat.

2. *Lactic Acid*, by inhalation (fifteen to twenty gtt. to f.  $\frac{3}{4}$  water). Seven cases, four deaths. It also dissolved the membrane, but failed to prevent its re-formation and extension.

3. *Sesquichloride of Iron*.—Four cases, two deaths. The disappearance of membrane not so rapid as with other substances, but it did at last separate, and the swollen surface beneath appeared to be benefited by the applications of the iron.

4. *Alcohol*.—It had no visible effect on membrane. Three cases, one death.

5. *Sublimed Sulphur*, applied by means of insufflation every three or four hours. Two mild cases got well, a severe one died.

In conclusion, Dr. Steiner believes that these local remedies are possibly of some value, but that none of them have the power to prevent the exudation in the larynx and bronchi, and that their influence in severe cases is very slight. Lime-water, he thinks, has the most solvent power. He recommends as the best treatment, locally, cold water, with chlorate of potash, wine, quinine; internally emetics for laryngitis; tracheotomy for asphyxia.—*Centralblatt für die Med. Wissensch. from Jahrb. für Kinderkrank.*, Dec. 1870.

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### HYPODERMIC INJECTION OF MORPHIA IN CHOLERA.

DR. JNO. PATTERSON, of Constantinople, has found the hypodermic use of morphia of immense service in cholera. In ordinary cases one or

two injections of from one-quarter to one-half grain each sufficed; rarely three, only in one case four injections were practiced. Dr. Patterson states that he has treated over 1,000 cases of the disease, and the hypodermic injections are the only thing he ever saw really affect its course. The following table expresses the results in the present epidemic treated in the usual way:—

No. of cases.	Recovered.	Died.
10	1	9
42	22	20

Of those treated with morphia, 8 were in *articulo mortis* before being seen, 1 had severe liver disease, 1 advanced phthisis, so that of the 32 cases in which a fair opportunity of trial was afforded there were only 10 deaths, of which 1 was 60 years of age, 1 was within a few days of confinement, and 3 hard drinkers.—*Med. Times and Gaz.*, Jan. 27, 1872.

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#### NEW METHOD OF TREATING TUBERCULAR PHTHISIS BY MEANS OF COD-LIVER OIL SAPONIFIED BY LIME.

DR. VAN DEN COURT, Professor of Clinical Medicine at the Hospital of St. Jean at Brussels, in a paper of some length commends most highly the following formula:—

Take pure cod-liver oil.....100 drachms.

Rub. it with hydrated (slaked) lime, added little by little, until it acquires the consistence of a pilular mass. Add to this—

Essential oil of bitter almonds.....1 drachm.

Mix thoroughly, and divide into boluses weighing from 20 to 25 centigrammes. These may be coated over with tolu by means of the ethereal tincture, and placed in a powder composed of three parts of sugar and one part of orris root. Two to be taken after each meal (6 to 8 daily).

Dr. Van den Court states that he has now not only himself used this formula for many years in very many cases, but he has also freely given the same to his professional friends, and in their hands as well as his own remarkably favorable results have been obtained. Of

course whilst it is being used, other judicious hygienic and medical treatment must be employed. The most benefit is to be expected in the early stages of the disease. In this stage he has always at least retarded decidedly the march of the affection, very often amended the organic degradation and the general nutritive disturbance, and not rarely effected a cure. In the more advanced stages, under the use of the remedy, the expectoration very sensibly diminishes, the hectic fever lessens or ceases, and the general nutrition often alters very greatly for the better.

It does not appear to act with any real efficacy in the acute forms of the affection; and the more chronic and torpid the disease, the more is to be expected from its administration.

In some cases it produces diarrhœa, when it must be temporarily abandoned. Hemoptysis and a very advanced condition of the disease, with excessive hectic and profoundly affected digestion, are to be looked on as contra-indications.

A very great recommendation is the almost total want of disagreeable taste.—*Bulletin Général de Thérap.*, March 15, 1871.

In a subsequent number of the same journal M. O. de Beek, pharmacien in chief to the St. Jean's Hospital, gives the following formula as the best method of making the lime saponification of cod liver, as determined by long experimentation and practice. He insists strongly that the ingredients shall be pure, and the directions absolutely complied with:—

Take of slaked lime in impalpable powder..	600 grammes.
Cod-liver oil.....	500 “
Water.....	1,700 “

Rub up a part of the lime with two and a half times its weight of water until it makes a smooth milk, marking in the Areometer 18° Baumé.

Put the oil with 200 grammes of hot water into a vessel (not tinned) large enough to hold twice the bulk of the material, rub it up well as though to form an emulsion, and immediately add, boiling hot, the milk of lime little by little and with constant agitation. Heat the mass gradually to 212°. Maintain this temperature and stir constantly till the lime has disappeared, and the mass acquired a firm, homogeneous consistence, and uniform yellowish color. Decant the mother water, and wash at once freely with water until the latter passes colorless. Evaporate off the water at a low temperature.

If the oil be pure and limpid, the mass is odorless. Freshly prepared, it contains 15 to 19 per cent. of water. It is insoluble in water, but feebly so in alcohol. Sulphuric ether, chloroform, sulphide of

carbon, and turpentine after a time soften it, and break it up into two series of lime salts, the one soluble the other insoluble in the menstruum. Concentrated hydrochloric acid turns it black. Heated with dilute nitric acid, it is decomposed and a number of acids set free—oleic, stearic, palmitic, butyric, acetic, fellic, cholinic, *phosphoric*, and sulphuric. By heat it partially fuses and decomposes. Exposed to the air its surface becomes brown and gradually hardens. In making into pills, the following formula is commended:—

Take of Cod-liver oil lime-soap.....20 grammes.  
Oil of bitter almonds..... 4 gtt.

Mix and divide into pills of the size ordered. Coat the pills with tolu by means of the ethereal tincture.

## ON THE PHYSIOLOGICAL ACTION OF BROMIDE OF POTASSIUM.

IN the *Archives für Heilkunde*, Heft 2, 1871, is an elaborate paper upon this subject by *G. I. Schouten*, an extended abstract of which is contained in *Algemeine Medicinische Central-Zeitung*, June and July, 1871. From this abstract we give a condensed translation, omitting the historical portion.

Grandeau's observation, that even small quantities of potash salts injected directly into the blood cause almost immediate death, has been confirmed by almost every observer, for following such injection comes heart-paralysis, with consequent cessation of the circulation and death, artificial respiration being powerless to re-excite the heart's action. On opening the thorax, if but a small amount of the potash salt has been used, spontaneous contractions are often visible, sometimes of the whole heart, more often of the auricle alone; if the dose has been a little larger, the ventricle is always found still, but excitable by electrical stimulation. When a very large amount of the salt has been injected, the whole heart is perfectly quiet and insusceptible to electrical excitation. If the thorax of a kitten be so opened that the heart's movements can be watched and a two per cent. solution of bromide of potash be slowly injected into the jugular vein, the motion will be seen to become slower, the pauses longer, and at last the heart stands still, or at least merely fibrillar contractions take place, no full systole. During the injection, however slowly it may be made, slowing of the heart's movements and lengthening of the pauses can always be observed, never acceleration of the heart-beat, although immediately afterwards the frequency of the pulse plainly increases.

The quantity that can be injected into the jugular vein of a cat without causing death is very small, and depends upon the strength of the solution and rapidity of injection. Of a one per cent. solution, some 50 c.c. (0.5 grammes of the salt) were injected into the jugular of a cat without causing death, but then an hour was required for the injection; a few c.c. of a two per cent. solution always was fatal. In the crural veins, however, 25 c.c. of the latter solution were injected without lethal effects; but when the repetition of the injection was attempted three hours afterwards, the animal died suddenly so soon as 6 c.c. had passed into the vein. Twenty-five c.c. of a three and a half per cent. solution were injected into the carotid and femoral arteries without killing the cat.

The injection of the chloride of potassium was attended with similar results, whilst the bromide of sodium was without influence.

In the case of dogs the effects were similar, but larger doses of the potash salts were required to kill. Thus, the injection of 3 c.c. of a six per cent. solution of bromide of potassium in the jugular of a dog caused immediate death, whilst 30 c.c. of a six per cent. solution of chloride of sodium were rapidly thrown into the same vein without disturbing the heart's action.

One cat bore without injury the subcutaneous injection of six grammes K. Br., whilst in another death followed two days after the similar use of the same quantity. Ten grammes produced death in one and a half hours and the chloride of potassium appeared even more powerful than the bromide. Six grammes of bromide of sodium did not appear to exert any influence whatever. When given by the stomach, six grammes of the bromide of potassium do not cause death in the cat, but 10 grammes are speedily fatal. The dog will bear the latter quantity well.

By small doses, voluntary motion and reflex activity were not perceptibly altered. With larger doses there were very evident weakness and uncertainty of movement, the animal sitting still, and only moving when strongly urged to it. Tremblings of the muscles only happened after injection of the salt into the blood, especially into the carotid artery. The observation that the cautious injection into the jugular produces immediately lengthening of the intervals without any increase of the rapidity of the heart's motion, Dr. Schouten thinks of great importance, as showing that the drug, when acting directly upon the heart, does not first produce excitement, and only after this paresis. The fact that much larger quantities are borne injected into the carotid than into the jugular, shows that the central nervous system is not so readily affected as the muscles. The experiments with the chloride of potassium and bromide of sodium show that Guttman and

Eulenberg were correct in attributing the action of bromide of potassium to the potash contained in it.

After all non-fatal doses of the bromide or chloride of potassium, even if so small as to have no perceptible influence on sensation or motion, there is constantly acceleration of the pulse. After injection into the blood or under the skin this increase comes on quickly; on exhibition by the stomach, only after some time. The influence on the pulse is more apparent when the latter is slow than when it is rapid. When subcutaneous injection is used, the increase is almost in inverse ratio to the dose, being very much more marked after two to four grammes than after five to six. This does not occur, however, when the drug is exhibited by the mouth or thrown into the blood. If the animal survives, the increase of the pulse frequency passes off gradually, and is not followed by a falling of it below the normal rate. Bromide of sodium has no influence upon the frequency of the heart's action. Very large doses injected directly into the blood may indeed be followed by such increase, but it is so slight and fugitive as to be scarcely worthy of note.

3. *On the Influence on the Arterial Pressure.*—Kemmerich states that small doses of the potash salts increased not only the rapidity, but also the energy of the heart's action. He found the pulse fuller and stronger, and concluded that the potash salts, like other heart-poisons, had in small doses an exciting, in larger a paralyzing effect upon the heart, and that this paralysis was preceded by a stage of very strong stimulation of the heart-ganglia. Kemmerich did not, however, *prove* that the energy of the heart was increased. Even if the pulse felt more rapid and fuller, it is possible that the heart was really doing less than its normal work. Mere frequency of action is of no importance, and Dr. Schouten shows by experiment that just as *the pulse frequency rises so does the blood pressure fall*.

This is of great interest in connection with the therapeutical use of the drug. It was very difficult to reconcile Kemmerich's assertion that there was real excitation of the heart, with the clinically well-known quieting action of the bromides.

In explaining the consentaneous increase in the rapidity of the heart's action and sinking of the blood pressure, the inter-dependence between the heart and blood-vessels, recently proven, is of great service. The nerves of the heart and of the blood-vessels exercise influence both upon the pulse frequency and arterial pressure. Is the blood-path anywhere enlarged, the arteries exert less resistance to the heart, and the blood pressure sinks, and at the same time, by the lessened blood pressure, the vagus centre is less stimulated, and the rapidity of the heart's action is increased.

The relation between the innervation of the heart and arteries is very complicated, and it is therefore very difficult to explain with certitude the causes of the observed weakening of pressure and increase of the pulse frequency. In order, however, to determine this, if possible, Dr. Schouten made various experiments. He found that after section of the vagi there was still increase in the rapidity of the heart's action. Immediately after the injection there was some slowing, but very soon the strokes began to grow more rapid. The pressure, on the contrary, was at first increased, and an hour after the injection had not fallen below the normal point. There is, however, a difficulty in this operation which cannot be surmounted. Division of both vagi and tracheotomy are very serious operations, which produce great disturbance in the system. One cannot, therefore, wait long after the operation. The fact that after the injection of the bromide of potassium, the pneumogastrics having been previously cut, the increased frequency quickly returns to the normal rapidity, gives ground for believing that if it had been possible to wait longer after the operation the increased frequency might not have occurred. The action of the bromide on the heart is then certainly not dependent upon the vagi nerves, although Dr. Schouten is by no means disposed to deny them all influence in the matter. The question, what influence the bromide exerts upon the innervation of the vessels and upon their tone, is not certainly answered; but Dr. S. believes that whilst positive proof is not forthcoming, it is very probable that relaxation occurs. When it is remembered that by the potash salts the voluntary muscles are injured in their functional power, the heart by even small amounts brought to a stand-still and its excitability destroyed, it seems most probable that the tone of the blood-vessels is lessened, even if the vaso-motor nerve-centres suffer no disturbance.

The action of the bromide, according to our author, happens in this way.

Under the influence of the bromide of potash a disturbance of nutrition occurs, so that in muscle and nerve the activity of tissue-changes is lessened. The heart activity naturally suffers from this, but so does also the innervation of the vagus and vaso-motor nerves, by the disturbance of which the rapidity of the heart-beats is increased, but not sufficiently to bring up the otherwise lessened arterial pressure. The calls on the heart are also lessened, owing to the lessened functional and chemical activities of the nerves.

By large doses the capability of action is so diminished, that in spite of the action on the heart's innervation the pulse frequency sinks. In cats, under these circumstances, death rapidly ensues. In this animal the tissue changes in health are so slight that they cannot be materially

depressed without compromising life. In other animals in whom tissue changes are more active, life can be maintained much longer. The main point here, however, is *that the increase of frequency of beat does not really mean increase in the work of the heart.*

That the bromide of potassium does lessen the activity of the tissue changes was shown by the experiments of Kemmerich. After twenty days, a hound fed on cooked flesh with a certain amount of potash salt weighed 1,275 grammes more than another which had received the same daily allowance, except that a soda salt was substituted for the potash salt, and a reversal in the use of the salts caused a reversal in the proportional weight of the dogs, dog No. 2 soon outstripping No. 1 when the former received the potash, the latter the soda.

Another proof lies in the diminished respiration, which Dr. Schouten has noticed as a constant result of the use of the bromide of potassium.

So also points the quieting influence which the bromide has upon abnormally energetic action of the heart and of the nerve-centres.

Whether the bromide acts in any way differently from other salts of potash, Dr. Schouten says he cannot say. It is certain that all of the potash salts have a similar influence on the pulse frequency and blood pressure; but whether one salt acts more intensely than another is not yet decided. Dr. Sasse has already called attention to one thing which must have influence on this point, namely, the more or less quick separation of the salt by the kidneys. According to Rabuteau, the iodide and bromide of potassium differ very much in this particular, the bromide of potassium being separated much more slowly, so that after four weeks it could still be found in the urine. Surprised at this statement, Dr. S. made one or two experiments, finding the bromide in the ashes of the urine, in one case, five days after the injection of 0.5 grammes into the jugular vein of a cat, and absent on the sixth day; in another failing to find it four days after the injection of 23 grammes! (So printed; evidently a mistake.)

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## A NEW AND IMPORTANT THERAPEUTIC PROPERTY OF QUININE.

THE following conclusions are arrived at in a memoir of 277 pages, by Doctor Monteverdi.

1. The action of quinine and its preparations is especially upon the grand sympathetic nervous system.
2. This action causes contraction of the muscular fibres supplied by



the sympathetic, particularly those of the uterus, urinary bladder, the intestinal canal, and the blood-vessels.

3. This action may be physiological or pathological, according to the amount of quinine given. If the fibres are relaxed, quinine restores their tone, and enables them to perform their functions. If they are contracted and excited, quinine produces a rigid tonic contraction, which renders them unable to perform their functions.

4. This property is especially marked on pregnant women, on whom quinine must be used with care, as it is able to and frequently has caused premature labor.

5. In labor it may be often used with certainty and advantage to stimulate the uterine contractions, for which it is preferable to ergot for the following reasons: It does not injure mother or foetus; it acts very rapidly and surely; it produces regular, intermittent labor-pains, precisely normal in character; it may be administered at any stage of the labor, from before the bag of waters is ruptured or the os dilated, to the time when the head is on the perineum.

6. In cases of retention of the placenta, either after labor or miscarriage, it is of great value, causing expulsion, and replacing manual assistance.

7. In menorrhagia in pregnant or confined women, it is to be preferred to ergot, as safer and more certain.

8. In amenorrhœa from uterine inertia, it is of great service.

9. In puerperal fever it is very useful, not only as a preventive, but also to combat victoriously the disease in its early stages.

10. In hysteria and hystericalgia it increases the uterine excitement, and more often is hurtful than beneficial.

11. In all the diseases of the digestive apparatus, or of the genito-urinary system, it is useful when they depend upon atony; if irritation or inflammation be present, it does harm. In the normal condition of the bladder it will sometimes cause such a rigid, persistent contraction of the neck, as to render the evacuation of urine difficult, or even impossible.

12. Small doses of quinine augment the force and frequency of the heart's action; large doses enfeeble it.

13. Opium and morphia are antagonistic to quinine, and are useful when it has produced toxic symptoms.

14. To produce physiological effects upon the uterus, to excite contraction, etc., 20-25 centigrammes (3 to 4 grains) should be given at each dose; to produce the paralytic effect, the dose should exceed a gramme (15.43 grs.).—*Annales et Bulletin de la Société de Médecine de Gand*, May, 1871.

## CUNDURANGO.

IN the *New York Medical Journal* for July, Dr. Bliss writes as follows :—

Mrs. Matthews, the mother of Hon. Schuyler Colfax, had been the victim of mammary cancer for a long period, which had already assumed secondary and constitutional symptoms in a marked degree. On the 29th of April last I placed her on the decoction of cundurango, and had the gratification of observing an early and decided change for the better in both the local and general conditions. One of its almost immediate effects was the relief of pain, and a free diaphoresis, characterized by an odor, distinctly observable, of the infusion itself. Upon the return of Mrs. Matthews to her place of residence in Indiana, I still continued to direct her treatment, and furnished the requisite supplies of the medicine.

On the 9th of May, just thirteen days after the commencement of the new remedy, her husband addressed me a letter, from which I make the following extracts :—

"The stony condition of the tumor has given place to softness. This morning I notice about one-third of the surface has turned from a scarlet to a white color, and it has commenced suppurating, as though the thing were dead and coming out. The whole tumor is very much flattened, the discharge is different, and not nearly so offensive. The greatest improvement is in her complexion. From a *tallowy*, puffy-looking, and somewhat bluish skin, she is regaining her old natural look, the skin shrinking, becoming wrinkled and clear.

"I am so happy in the prospect of a cure that I feel like a new man, as though a ton of lead had been lifted from my heart. Is it not a little singular it has not had any perceptible effect upon her nervous system? Her digestion is good, and she begins to feel that she will get well."

On the fourteenth of the same month Mr. Matthews writes as follows :—

"This is the seventeenth day since I commenced the use of cundurango; I will cease for a few days, and note carefully the effect. When I began the treatment, Mrs. Matthews' breast was almost as hard as a stone, about four inches in diameter, with raised edges, hard, and scarlet-colored, bleeding profusely at the slightest touch, emitting an odor of the most sickening and disagreeable kind, discharging a brownish, cancerous, limpid fluid; the countenance bloated, tallowy-looking, with a bluish pallor of the whole face; the lips turned blue at the least exertion, so that I have been very much alarmed, fearing a rapid crisis and dissolution; at the same time the tumor itself enlarged with fearful rapidity, so much so that I could notice its growth from day to day.

"Now all is changed—the countenance has resumed its old familiar look; she moves about with great sprightliness, the blue of the lips no longer indicating fatigue or effort. The granular swelling under the chin is gone; strength increasing; the tumor itself much flattened and decreased in protuberance; the color changed to a white, maturing sore; the limpid cancerous discharge ceased, and

in its place a healthy discharge of white matter much less offensive; the hardened glands are soft to the touch, the whole symptoms indicating most plainly to me that the treatment has so far neutralized the poison of the blood, and that another short campaign with cundurango will insure a complete cure."

On the second of the present month I visited Mrs. Matthews at South Bend, and was indeed astonished at the rapid change which had taken place. The tumor had become soft, the color natural, the secondary glandular deposits had all disappeared. The improved complexion, muscular firmness, and elasticity of spirits, all pointed to an early and complete recovery.

Mrs. Handy, residing on M street in this city, was the next subject of experiment with the cundurango. This was a highly-typical and fearfully-advanced case of cancer uteri. The grayish color, unequal, irregular elevations of the ulcer edges, the sympathetic disturbance of the bladder, the paroxysms of intense pain, together with the hot, dry, shrivelled, yellow surface, the wasted muscles, sunken eyes, the small, quick, wiry pulse, revealed one of those sad cases where all hope of remedy fails.

The cundurango, in the form of decoction, was administered first to Mrs. Handy on the thirty-first day of last month. A regular record has been kept from day to day, describing the least change of symptoms, but I have not the space to introduce it here. Suffice it that, even in this extreme case, the beneficial effects of this wonderful remedial agent have been most apparent. The pain has steadily declined, the diseased parts are less tumefied and sensitive, and the discharge is very slightly offensive. The cachectic appearance of this patient has much improved, and she expresses herself as feeling altogether better.

A lady of the family of Hon. Mr. Gorham, Secretary of the United States Senate, has had mammary cancer of several months' duration, and her condition was pronounced hopeless by leading Northern surgeons. I was called to see her on the first of June of this year, and found cancer of the breast, with secondary deposits in the shoulder and humeral portion of the left arm, attended by extreme rigidity of the neck, and almost complete immobility of the affected limb.

A careful daily record has been preserved of this case also, by which the most decided improvement is indicated. The mammary tumor has grown softer, and the line of skin attachment bisecting the nipple is much less marked. The head, before stiff, is now perfectly free and movable, while the natural mobility of the disabled arm is restored, and the tissues, before hard, are now soft and natural. The general condition progresses favorably *pari passu* with the local improvement.

## NEURALGIA TREATED BY THE CONSTANT CURRENT.

DR. BUZZARD and Dr. Anstie reported cases to the Clinical Society in which this mode of treatment proved very effective. In Dr. Buzzard's case, a woman, aged 65, had suffered for three months from paroxysms of agonizing pain in the neck and right arm, which attacked her several times every hour, night and day, deprived her of rest, and rendered her arm useless. The neuralgia had followed seizures which sufficiently indicated its central origin, and this, coupled with the age of the patient and the degeneration of the tissues, rendered its cure in the highest degree improbable. Applications of a sedative character had been useless in relieving her suffering. A constant current derived from ten cells (increased afterward to fifteen cells) of a Weiss's battery was applied from time to time, between the cervical vertebræ and the hand, with the effect of producing remarkable relief to her pain, insomuch that she at one time thought herself cured. Under the influence of this treatment the patient was enabled to sew, and to cut her food with her right hand, which had previously been so helpless that she was forced to lift it with the other. With the view of testing the effects of the application, it had been omitted on several occasions, and other remedies, as blisters, sedatives, and tonics, had been employed; but these failed in preventing the paroxysms of pain. Summing up the results of treatment, Dr. Buzzard said that out of sixteen applications of the constant current, ten had been followed by very great and well-marked relief, two by moderate relief, and four by very slight relief. Dr. Buzzard brought the case forward, not as one of cure of neuralgia, but as a good example of the effects of the constant current in relieving pain; and he drew attention to the process because it was as yet very little employed for this purpose in this country, although, as was well known, its efficacy had been perfectly recognized and insisted upon abroad for many years past.

Dr. Anstie referred at the same meeting to two cases—one of severe neuralgia in the right cervico-brachialis, in a married woman aged 48; the other of a double cervico-occipital neuralgia, in an unmarried needle-woman aged 30. In the former case a cure was effected; in the latter not. The constant current was employed, with the strength of ten cells, afterwards increased to fifteen; the positive pole in the first case being applied alternately on the various foci of pain, the negative pole being applied by the right side of the three lower cervical vertebræ. The pain was at once diminished, and ceased altogether at the end of thirteen days; and a secondary anæsthesia of the skin, with secondary paralysis of the deltoid and trapezius, were

removed at the end of twenty-four days' treatment. The cure was found persistent six weeks later. Dr. Anstie remarked that the effect of the constant current in neuralgia was remarkable, but that there were as yet some unexplained anomalies in its action. In the large majority of cases it acted as a palliative most strikingly. In a not inconsiderable number of cases it appeared to cure the disease absolutely; in a few examples it failed to produce any good effects. As a general rule, it was far less effective in the neuralgias of old persons with degenerated tissues than in younger subjects; but occasionally even a young person, like the second of his cases, fails to derive benefit from it.—*Lancet*.

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### NITRITE OF AMYL IN HEMICRANIA.

BY OSKAR BERGER.

DuBois-Reymond having stated that certain forms of hemicrania, especially associated with contraction of the pupil of the affected side, were due to tetanic spasm of the arterioles and capillaries of the affected part, and Brunton having portrayed nitrite of amyl as a direct relaxant of the capillaries, it occurred to Dr. Berger to employ the remedy. The case was as follows: An unmarried woman, 24 years old, had for many years suffered at every monthly period (otherwise normal) with left-sided migraine of the most severe form. The attack commonly commenced in the morning, increased in intensity till mid-day, and slowly declined; severe vomiting and total loathing of food were both present. The left side of the face was very pale, with the carotid feeling very hard and pulsating very strongly. The feeling of cold soon spread over the whole surface, and the paleness of the left face lasted all day. The patient had herself remarked that often, at times when she was free from pain, the left side of the face and the left ear would be much more red than the other, sometimes without obvious cause, sometimes in blushing. During a paroxysm of pain five drops of the nitrite were inhaled; the pain was immediately "banished." She felt the blood forcibly ascend into her face, and a peculiar, agreeable sensation pass through her head, every trace of the agony having vanished. The face became reddened, but this disappeared in a few minutes. Vomiting did not come on as usual; she was able to eat her dinner, passed a comfortable day, and the next morning, instead of, as usual after an attack, being worn out, was perfectly fresh and well.—*Allgemeine Medicinische Central Zeitung*, May 13, 1871.

## DISINFECTANTS.

THE Metropolitan Board of Health of New York, having instructed the Sanitary Committee to investigate the claims of various disinfecting and deodorizing preparations, received the following report on the subject, which explains itself. In connection with the report of the committee is also the report of the analysis of the several disinfectants made to the City Sanitary Inspector by the Assistant Chemist to the Board :—

HEALTH DEPARTMENT, NEW YORK CITY, }  
August 9, 1871.

*To the Board of Health :*

The Sanitary Committee, to whom the applications with reference to disinfectants were submitted by the board, having caused a chemical examination and experimental tests to be made in their presence, respectfully report :

On the 27th of July a series of experiments were made at the foot of West Thirty-eighth street, in this city, with the following-named articles, as furnished by their several proprietors, viz. :

“Bromo-chloralum ;” proprietors, Tilton & Co.

“Hydrated Chloride of Aluminium ;” proprietors, Drs. Ehrhardt & Alexander.

“Girondin ;” Jas. Meyer, Jr.

The most offensive decomposing animal tissues, and matters almost in a state of putridity, were the materials employed for the purpose of testing the disinfecting power of these different articles. These tests were therefore of the most severe character, as treating with substances and offensive odors, than which probably nothing worse could be found. In making the experiments, each article was applied to the same kind and quantity of offensive material or substance, using them both in their concentrated and diluted proportions. In this manner the committee were able not only to judge of the merits of each article as a disinfectant, but also to form comparisons as to their relative values for such purposes.

Portions of offal from slaughter-houses, in very offensive conditions, portions of livers and dead dogs in an advanced state of decomposition, were each experimented upon in turn, and the time involved in deodorizing and disinfecting the same carefully noted.

On the 3d of August another series of experiments were instituted at the Disinfecting Depot, on this occasion upon rotton eggs, night-soil, putrid fish, stable manure, etc., with the same articles as before mentioned. Without giving the minute details of these experiments,

which were carefully noted at the time, the committee would state the results ascertained to be as follows:—

The experiments and tests with the article called “Bromo-chloralum” failed in each instance of convincing the committee of its possessing any remarkable properties either as a deodorizer, disinfectant, or for the purpose of arresting fermentation or decomposition, except in a very slight degree.

Those with the “Hydrated Chloride of Aluminium” gave somewhat better results, but were by no means as efficient and rapid as is desirable for such purposes, and also failed in that completeness of deodorization and disinfection for which such articles are found necessary.

With the “Girondin,” however, the tests resulted most satisfactorily. Its effects upon the nauseous substances were prompt and efficient, rapidly and completely neutralizing offensive odors, arresting the putrefactive process almost immediately upon its application, both in its concentrated and diluted proportions.

The two former preparations, “bromo-chloralum” and “hydrated chloride of aluminium,” are claimed to be inodorous and innocuous, two characteristics very desirable for certain specific uses, but from the fact that they do not either destroy or displace offensive conditions, and in fact disengage the sulphuretted hydrogen gas and thus create more offensive effect, under certain conditions, their use for general disinfection is extremely limited. On the other hand, the “girondin” being largely composed of metallic solutions, not only prevents further fermentation, but also neutralizes sulphuretted hydrogen. Possessing an acetic odor, it also displaces any offensive odors that may still be evolved, during its more extended effects as a disinfectant.

With respect to the time employed in effecting the desired results with these three liquids, in the quantitative experiments, it was found that the “girondin” was capable of perfectly deodorizing and arresting the decomposition of animal substances and preventing the fermentation of vegetable substances when applied in its pure state, in one minute, while the same perfect result could not be obtained with either of the other fluids employed even in a length of time.

For practical purposes in the application of disinfectants, it is found necessary to employ such agents as will rapidly and effectually accomplish the desired end, and at the same time be non-destructive to such articles and things as it must necessarily come in contact with. Probably an article or compound can hardly be found that will accomplish deodorization, arrest of putrefaction and fermentation which shall be inodorous or innocuous to every other substance or thing than that to be operated upon.

In the "girondin" fluid, however, your Committee believe that these objections are reduced to a minimum, as it does not present poisonous properties, except in its most concentrated form, and that only which would be used in the most extreme cases by expert hands. For general uses its ordinary dilution, 1 to 6 parts, appears to be entirely devoid of any dangerous property.

Respectfully,

G. CECCARINI, M.D.,

*Chairman Sanitary Committee.*

The Committee therefore recommended the Board to obtain the necessary quantity of the "gironadin" fluid for the use of the Sanitary Inspector.

CHEMICAL LABORATORY OF THE HEALTH DEPARTMENT. }  
August 5, 1870. }

To MOREAU MORRIS, M.D., *City Sanitary Inspector* :

*Sir*.—I have the honor to report on the qualities of the three disinfectants which I have submitted to analysis and various experiments to ascertain their respective value.

The disinfectants examined were:—

1. Chloride of aluminium, manufactured by Ehrhardt & Alexander.
2. Bromo-chloralum, manufactured by Tilden & Co.
3. Girondin disinfectant, J. Meyer, Jr., agent.

The chloride of aluminium solution is of yellow color, originating from iron, which is probably an impurity of the acid or the albuminic hydrate used for the manufacture. This impurity is, however, of no deleterious consequence, as iron compounds are even better disinfectants than the alumina. The specific gravity is 1.15. The solution contains about 21 per cent. of anhydrous chloride of aluminium and iron, and besides that, considerable chloride of calcium, the whole amount of solid constituents being 28 per cent.

The Bromo-chloralum is nearly free from iron, the specific gravity is 1.143, the whole amount of solid constituents is about 27.5 per cent. It contains about 18.5 per cent. of anhydrous aluminic chloride. It contains also lime and considerable alkaline salts. The bromine is combined and not free, and as we know only of the disinfecting properties of free bromine, but nothing of it when combined, and also the experiments made with it do not show any superiority over the chloride of aluminium patented in England, a determination of this substance was deemed unnecessary.



Deduced from theoretical reasons, it was to be expected that both these disinfectants, in contact with putrid animal matter, should develop sulphuretted hydrogen. A large series of experiments showed plainly that this was a fact. From this reason, a thorough disinfection cannot be expected from these substances.

The Girondin disinfectant is a solution of a light blue color, having a specific gravity of 1.25. It contains about 29.7 per cent. solid constituents, and is mostly composed of sulphate of zinc, of which substance it contains 25 per cent. The oxide of copper (0.67 per cent.) is combined with other acids (acetic and nitrous). As a disinfectant the Girondin fluid becomes valuable by its being mostly composed of metallic substances which not only prevent further fermentation, but also neutralize the sulphuretted hydrogen. Experiments sustained this view. This chemical reaction was undoubtedly the reason that the disinfection was in all cases considered to be more thorough, if the Girondin disinfectant had been used. As none of these disinfectants have a particular smell, it is easy to make comparative experiments. The results of our practical experiments showed that a disinfection could be performed, but not a complete deodorization obtained. An acid smell will be always present, which in the case of the experiments with the alumina preparations is mixed with the foul odor of considerable sulphuretted hydrogen.

If substances to be disinfected contain but traces of sulphur, as for instance horse-manure, or floors in horse-stables saturated with horse-urine, I consider all these disinfectants equally applicable, as the main substance to be absorbed is ammonia, the tendency of which to combine with either hydrochloric or sulphuric acids does not vary much.

The following is a tabular statement of the results of the chemical investigation :—

	Specific gravity.	Degrees Baumé.	Solid matter. Total perc'tge.	ACTIVE DISINFECTANTS. ANEHYDROUS.		
				Chloride of aluminium.	Sulphate of zinc.	Sulphate of copper.
Chloride of aluminium....	1.15	18.8°	28.0	21.0		
Bromo-chloralum .....	1.14	17.7°	27.5	18.5		
Girondin disinfectant.....	1.25	28.8°	29.7		25.0	1.4

Respectfully submitted,

H. ENDEMANN, Ph.D., Asst. Chemist.

—*Journal of Applied Chemistry.*

## PHYSIOLOGICAL ACTION OF HYDRATE OF CHLORAL.

At the meeting of the French Academy, June 12, M. H. Byasson announced the following conclusions, as drawn from a very extended series of experiments upon frogs, rats, dogs, and men :—

1. The action of chloral-hydrate is different from that of chloroform.

2. This action is peculiar, but may perhaps be looked on as the result of the conjoined action of chloroform and formic acid.

3. The action of chloral-hydrate differs from that of trichloroacetic acid, or of the trichloroacetate of soda, which breaks up into chloroform and acetic acid.

4. A part of the chloroform formed by the action of alkali of the blood is eliminated by the pulmonary mucous membrane; a part of the formic acid is eliminated by the urine as formiate of soda.

5. There are three degrees of the operation of chloral on the animal. The first degree is a feebly soporific and slightly nervous sedative action.

The second degree: an intense soporific action, with diminution of sensibility; at this period there is a deep sleep, of variable duration, without apparent trouble of the principal functions of life.

The third degree: complete anæsthesia, with total loss of general sensibility and muscular power. Death almost always follows this degree of action for a plain reason: a considerable dose of chloral has been administered, and as its action is progressive, the organism cannot endure the strain until the complete transformation and elimination of the drug.—*Gazette Médicale de Paris*, June 24, 1871.

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OBSERVATIONS AND EXPERIMENTS WITH THE MICROSCOPE ON THE CHEMICAL EFFECTS OF CHLORAL-HYDRATE, CHLOROFORM, PRUSSIC ACID, AND OTHER AGENTS ON THE BLOOD.

BY THOMAS SHEARMAN RALPH, M.R.C.S.

In a paper with the above title, read before the Medical Society of Victoria, the following conclusions are arrived at: *Hydrate of chloral*, administered in any way, gives rise to the production of bright red or dark red particles, masses, or globules in the blood. Starchy bodies are also met with in both the blood and urine. The same results follow exposure of freshly-drawn blood to the vapor of chloral. Ammonia given by the lungs or subcutaneously during the action of chloral, seems to heighten these effects.

*Formic Acid, Lactic Acid conjoined with Prussic Acid, Prussic Acid conjoined with Ammonia*, all produce the same effect on freshly-drawn blood.

The action of hydrate of chloral while decomposing under ammonia on a salt of iron, presents changes apparently identical.

The chemical effects of hydrate of chloral and ammonia, of prussic acid and ammonia, on some vegetable tissues, appear to be much the same in character as those produced in the blood, minus, of course, those on the solid albuminous matter. All these results Mr. Ralph refers to the action of formyl or ammonio-formiate on the iron of the blood and vegetable tissue.

The decomposition of prussic with lactic acid, and of prussic acid with ammonia, can supply chemically the element necessary for the production of formyl or formiate of ammonia.—*Monthly Microscopical Journal*, August 1, 1871.

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#### HYDRATE OF CHLORAL IN TETANUS.

In this paper Mr. C. Macnamara states that in the Chadwic Hospital, from 1865 to 1869, of 42 cases of traumatic tetanus treated, 16 or 38 per cent. recovered; whilst of 39 cases of idiopathic tetanus 24 or 60 per cent. got well, the treatment being in all cases uniform—that of aloes and Indian hemp, as recommended by Dr. J. Jackson. The patients' diet was confined to bread and milk. Recently 7 cases of traumatic tetanus were treated with chloral alone, the food being as before; only one of these recovered. Of three cases of idiopathic tetanus, two recovered. The results are therefore decidedly favorable to the old method of treatment. Mr. Macnamara thinks that the chloral is simply useful in these cases as a hypnotic, but as such is invaluable, as it will never fail to cause sleep, if given largely enough. It does not directly prevent the spasms; and when the patients awake they often appear to recur with greatly increased violence, as though the nerve-force had been simply pent up. The combination of the chloral with Calabar bean or with Indian hemp seems to be indicated: one of the marked effects of the latter drug has been found to be increase of the patient's appetite and a sustaining of his spirits, which often become exceedingly depressed if the drug is omitted.—*The Indian Medical Gazette*, April 1, 1871.

In a subsequent communication to the same journal, Mr. Macnamara details a very severe case of traumatic tetanus which terminated favorably, the treatment of which was by chloral and Calabar bean.

**Chloral a Hypnotic rather than Anæsthetic.**—The following extracts from a paper on chloral, by Dr. A. M. Fauntleroy, are interesting as illustrating the fact that chloral is much more decidedly a producer of sleep than a luller of pain :—

We essayed to operate, in both instances, for the removal of hæmorrhoids by ligature, using the hydrate of chloral. In these cases profound sleep was induced by the exhibition in one instance of sixty, and in the other of ninety grains. The very moment the tumors were pierced by the needle, the patients awoke to an acute apprehension of the circumstances and their surroundings, and it became necessary to resort to the inhalation of chloroform.

To one of the patients referred to we had on a former occasion administered chloroform by inhalation, and it was fully three-quarters of an hour before chloroformization was established; but when we resorted to the chloroform, after the failure of the hydrated chloral to produce anæsthesia, the patient yielded quietly and quickly to chloroform. We have repeatedly administered it in cases of so-called neuralgic headache, in which the subjects have declared their consciousness of pain up to the last moment. Some have expressed themselves as going to sleep despite of the headache.—*Richmond Med. Journal.*

Mr. Robert Munro (London *Lancet*) sums up his experience with chloral, as follows :—

1st. It is of great benefit in cases of mental excitement and functional disturbance of the nervous system, when there is no organic disease of the brain.

2d. It is injurious in cases of protracted and great debility, more especially if the body is reduced by unnatural discharges.

3d. Its long-continued use, even in small doses, is injurious under any circumstances whatever.

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## ON THE USE OF HOT BATHS IN DROPSY.

BY A. STEFFEN.

THE use of hot baths for dropsy is not forbidden by any age, or scarcely any condition, of the patient. The youngest child and the most feeble person may be placed in them; in the latter case great care, however, must be exercised not to repeat them too often, as experience has shown that the loss of bodily weight may go on for one or more days after a single bath. The bath should be at about 28° R., and increased up to 32° or 34° R. whilst the patient is in it, and the latter should afterwards be well covered in bed, so as to sweat him for two or

three hours. These baths are indicated by general œdema, and by free exudation in the peritoneal cavity, in the pleural cavity, and in the pericardium, provided in the last case that the disease has not progressed too far. When indicated, tonics, such as iron and quinine, should be exhibited during their employment. Dropsy from improper nourishment or care, and dropsy after severe sickness, the expression of a loss of heart-power, will often disappear by judicious general treatment and nursing; sometimes the hot bath may be used with advantage. In the dropsy appearing during scarlet fever, without kidney affection, on the first appearance of the œdema the bath should be used, a practice which the experience of the children's hospital at Stettin strongly confirms. The use of the hot baths for dropsy after scarlet fever is not, however, followed by uniform results. In some cases the first bath is followed by profuse sweating and loss of weight; in other cases two or three baths are required before any reduction commences. In a third set the swelling and exudation steadily increase for a time, in spite of the use of the hot bath; and after a decrease has apparently set in, a renewal of the increase may take place. In all these cases, however, with very rare exceptions, the disease finally yields to the treatment. Care must be taken not to continue the latter too long, as experience has shown that the decrease of weight goes on often many days after the disuse of the baths.

In dropsy dependent upon organic disease, the hot bath treatment is often of great service in freeing the patient from the torture of the dropsy, even when it can have little or no effect upon the final issue. In dropsy associated with acute kidney disease, especially after scarlet fever, caution must be practised in the use of hot baths, although they are often very useful. They are contra-indicated by capillary bronchitis, or the commencement of œdema of the lungs; when these are present, they have a very rapidly fatal influence. When the urine is being passed in very small amount, they must also be avoided, as tending to lessen still further the excretion, and favor thereby uræmic eclampsia. In such cases Dr. Steffen has used the warm (*not hot*) baths, with cold-water douche and leeches to the head, benzoic acid internally, and has not lost a single case. The contra-indications to the use of the hot bath are: The existence of fever, acute disease of the brain, high grade of transudation and exudation into the pericardium, threatening of œdema of the lungs. In some cases, when the lungs have been entirely free, the œdema will come on during the bath, betraying itself by great sudden dyspnœa. The patient in such cases should be immediately taken out of the bath, and cold water be energetically poured upon his head, neck, and back.—*Jahrbücher für Kinderheilkunde*, Heft 3, 1871.

## ON THE COOLING OF FEVER PATIENTS BY ICE-BAGS.

DR. W. LEUBE states that his position in a military hospital, during the late war, brought under his care a large number of fever cases, who were treated by the cold bath with satisfactory results. The French prisoners, however, resisted the bath with all their strength, and he consequently was led to invent a new method of reducing the temperature. Two parallelogrammatic water-tight bags of India-rubber cloth were prepared, the one measuring unfilled 70 cm. long and 45 cm. broad, the other 60 cm. long and 45 cm. broad. These bags were filled with a freezing mixture, composed of ice and salt. In order to allow comfort to the patient, the ice was reduced to a powder and passed through a sieve. After five to six pounds of this ice powder were put into each bag, one to one and a half pounds of salt was thrown into each and the orifice closed. Two bandages were then laid transversely across the bed, and the ice-bags were placed on them in such a way that the shorter should correspond to the trunk, the longer to the legs of the patient, who was laid upon the ice-bags after they had been covered with a gum blanket and a linen sheet. By means of the bandages the man was then tied down, one band passing over him above the knees, the other above the navel. The patient was then covered over with bed-clothes. The patients rarely complained of the cold, and were allowed to remain upon the ice-mattress from an hour to an hour and a half. In order to show the effect of the ice-bags on the temperature, a number of experiments are given; of these one only is here quoted.

*Experiment.*—French prisoner, 24 years old. In the third week of typhoid fever, with albuminuria and enlargement of spleen.

Time.	Temper.
1.	39.7. Pulse 100.
2.	39.8.
3.	39.9.
4.	39.9.
5.35.	Put on the ice-mattress.
5.40.	40.1.
5.45.	39.9.
5.50.	39.8.
5.55.	39.65.
6.	39.5.
6.5.	39.4.
6.10.	39.25.

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Time.	Temper.	
6.15.	39.20.	Pulse 96.
6.20.	39.2.	Lower of the ice-bags, upon which patient had been lying, placed on front of the legs.
6.25.	39.0.	
6.30.	38.95.	Pulse 87, full.
6.35.	38.97.	Patient commenced to tremble.
6.40.	38.95.	
6.45.	38.80.	Cold mattress removed.
7.	38.7.	
7.30.	38.7.	
8.	38.8.	

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Dr. Leube claims for this method superiority over the cold baths, because the patient is not moved and fatigued so much, the shock is not so great to the nervous system, and the circulation of but a portion of the surface being interfered with, there is less danger of internal congestions.—*Deutsches Archiv für Klin. Medicin.*

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**The Use of Cold Baths in the Epidemic of Petechial Typhus in Breslau, 1868-69.** — In the first portion of the epidemic 498 cases were treated expectantly, in the last period 246 by cold baths. Every two hours, if the temperature rose above 38° C., the patient was put in a bath at 15° R. for fifteen minutes. After bathing the temperature fell from 1°-2° C., and remained so one-half to one and a half hours. The duration of the fever did not appear to be lessened, but its mortality decidedly so. 16.47 per cent. died of cases treated expectantly; only 9.23 per cent. when the bath treatment was commenced the first week; 14.66 per cent. when it was not begun until the second week of the disease. Complications, such as pneumonia, were most rare under the water treatment. — *Allgemeine Medicinische Central-Zeitung*, June, 1871.

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#### ON ABSORPTION THROUGH THE SKIN FROM FULL BATHS.

IN a paper in the *Wiener Med. Wochenschrift*, Dr. Chrzonzewski relates experiments upon this subject made both upon animals and man. The anus and urethra were covered up, and in thick-haired animals the skin was shaved. The result was that in a two per cent. solution of muriate of morphia the animal died in eighteen to twenty hours; in one per cent. of strychnia, in two and a half to four hours;

in one per cent. of nicotin, in one to one and a half hours; in two per cent. of cyanide of potassium at 2° C., in a half to one-third of an hour; more quickly at a higher temperature.

A boy, æt. 15 years, remained six hours in a sitz-bath (65° C.) of infusion of digitalis (one-half pound to four buckets of water); fourteen hours afterwards the influence on the heart manifested itself, the pulse fell from 84 to 60, gastric and cerebral symptoms came on and lasted two days.

In order to test the method of absorption, such experiments as the following were instituted: Ferro-cyanide of potassium was injected into the vein of a dog, and the animal placed in a bath containing an iron salt; in three to five hours the veins and capillaries of the skin were stained an intense blue, the cellular tissue remaining colorless.

The following conclusions were arrived at: 1. The skin of man and animals is permeable to substances in watery, and still more easily in spirituous solutions. 2. Elevated temperature hastens absorption. 3. Absorption may take place in various ways, diffusive (Indigo carmine), through the blood-vessels (formation of Prussian blue), and through the lymphatics (ammoniacal solution of carmine). 4. The lymph vessels have their origin in the cells of the connective tissue.

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## BRIEF MEMORANDA ON TREATMENT. CHARITÉ HOSPITAL, BERLIN.

BY DR. SPENCER FERRIS.

LEO-TYPHUS.—Traube distinguishes two stages in this disease. The first, which lasts about fourteen days, is characterized by swelling and ulceration of Peyer's patches. The second, which immediately follows, is marked by the process of sloughing; it is indicated by a morning temperature of normal, or less than normal height, and a very high evening temperature. In the first stage the treatment consists of aqua gummosa and milk and soup diet. In the second stage excitants and stimulants are given; Rhine wine is the stimulant always used—never brandy. When the temperature rises to 40° C. (104° F.), Celsus's ice-bag is placed to the head. The mortality from this disease is not more than 3 or 4 per cent. Dr. Vreuzler states that out of the last 123 cases not more than 4 deaths have occurred. This appears to indicate that at Berlin the disease is of a mild character. In the same affection Frerichs gives no alcohol, and not always wine, but as much beef-tea, eggs, and milk as the patient can take, with nitric and muriatic acids. In hemorrhage from the bowels he gives a quarter of a grain of acetate of lead, or a dose of tannin or sesquichloride of iron, with the



addition of an ice-bag. Frerichs has also treated a few cases, both of typhus and typhoid, by baths and wrapping the body in cold cloths.

**ACUTE RHEUMATISM.**—Traube says that in persons under twenty-five years of age endocarditis, pericarditis, or some form of heart-disease almost always takes place; between twenty-five and thirty cardiac complication is not unfrequent, but that in those over thirty it is very rare. It may become developed, he says, whether the patient be in hospital or not. This is contrary to the experience of Dr. Gull, who says, in one of the "Guy's Hospital Reports," that if it is not established before the patient's admission, it does not come after. Traube envelops the limbs in flannel, never in cotton-wool; in light cases his treatment is entirely expectant. When limbs are much swollen, large blisters are used; in severe cases, where there is not much swelling, antiphlogistic remedies are employed. Frerichs gives half a drachm of iodide of potassium in the day, and when there is bad pericarditis or pleurisy, he lays the ice-bag over the chest, as he says it eases the pain. He also gives infusion of digitalis. The ice-bag is especially resorted to when, with endocarditis, there is great excitation of the heart's action.

**PLEURO-PNEUMONIA.**—Traube gives citric acid and aqua gummosa, warm applications, and in very bad cases takes blood from the arm. He finds that wine is very badly borne, and never gives it. His mortality is very small.

**PERITONITIS.**—Traube rubs in a scruple of mercury ointment daily, till the mouth is affected, gives no opium, and allows the bowels to act when they will. He occasionally employs warm applications and leeches. He pursues the same treatment for puerperal peritonitis, in which his mortality is not more than twenty-five per cent. He distinguishes two kinds of puerperal fever, the "peritonisch" and the "phlebitisch;" the former he treats by inunction, as above, and the latter by quinia and tonics.

**A CASE OF ILEUS.**—The bowels had not been open for nine days, and the patient experienced great pain in the bowels, and could not lie still. Traube gave him ice to suck constantly, and he had as much ice-water as possible injected up the bowel. But these measures had no effect, and in three days an artificial anus was made in the right inguinal region. Three days after the patient was going on well.

**A CASE OF TRICHINIASIS.**—The first symptom was œdema of the eyelids and face, then pains in all the muscles and joints, followed by stiffness of all the joints, and then came contraction of the joints and a flabby swelling of the muscles, with high fever and high temperature. The treatment consisted in friction of the limbs with bay salt. Patients generally remain in the hospital six or eight weeks for this

disease. As the malady recedes the muscles often shrink and waste. Traube finds it of little use to cut out a piece of the muscle and put it under the microscope by way of aiding the diagnosis; for it is seldom that trichinæ are found in such a piece, although the body after death may be found to be full of trichinæ. Other reasons against the proceeding are, that the wounds made in people with this disease heal very badly, and if the patient does not regain full use of the limb the unfavorable result will be ascribed to the puncture.—*Lancet*, July 8, 1871.

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### PUNCTURE OF THE STOMACH AND INTESTINES FOR TYMPANITIC DISTENTION.

At the meeting of the French Academy of Medicine of July 11, a communication was received from Prof. Fonnssagrives, of Montpellier, on the above subject. He stated that the procedure was very common in veterinary medicine, and that in Bolivia it was habitually resorted to in the treatment of man. The operation was first practised in France by Nélaton. Since 1866 he himself had frequently resorted to it. He had used a hydrocele trocar, and in no instance had any inflammation or serious local symptoms followed.

If done with a small exploring trocar and canula, he considered the operation perfectly safe, and that it ought to be performed whenever serious symptoms arise from distention by gas, and was often strongly indicated in cases of strangulated hernia. It had been performed ninety times on sixteen individuals, and as many as fifty times in a single case.—*L'Union Médicale*.

M. Depaul stated before the *Société de Chirurgie* at Paris, that recently he had employed the puncture in a case of peritonitis in a woman aged twenty-two years, eight days confined.

She was in a most critical condition, everything presaging approach of death. He plunged a small trocar in the direction of the transverse colon; a jet of fetid gas escaped with sufficient force to make a musical sound through the canula, and with it was also ejected fluid of a stercoraceous odor. The patient was relieved. At the evening visit nothing new presented. The next day the puncture was repeated, with similar results. This time the spot selected was a little above the umbilicus. The patient at the time of his speaking was free from fever, and apparently convalescent.

M. Trélat stated he had twice performed the operation in cases of puerperal peritonitis. No evil results followed it, but the patients died notwithstanding.—*L'Union Méd.*, July 27.

M. Blot, before the Society of Medicine, stated that he had practised the operation on a woman on whom he had performed Caesarean section. The tympanites had caused the tearing out of the sutures. The woman finally perished, and on post-mortem examination neither gas, nor liquid, nor indications of peritonitis were found in the abdomen.

M. Giraldès had made the puncture both in adults and children, and thought it especially useful in cases of intussusception.

M. Fonssagrives thought the innocuity of the gastro-intestinal puncture had been established by its having now been performed without accident in eighty cases. He preferred the instrument recently invented by M. Huguier to the trocar, and thought the operation should always be performed when other measures failed in tympanites threatening suffocation.

M. Huguier described his instrument as a very sharp needle placed in a fine canula.—*L'Union Médicale*, July 20, 1871.

The *Dublin Quar. Jour. of Med. Science* mentions three cases in which marked relief was afforded by this operation. In one the distention was caused by the pressure of an ovarian tumor on the intestine. The puncture was made in the caecal region, and was repeated daily more than fifty times, at the request of the patient. At the autopsy no traces of the punctures could be observed. The second case was that of a man sixty-one years old. Eight punctures were made in fourteen days, with great relief and no unpleasant results. In another case, reported in the *Practitioner*, the operation was performed upon a patient with double pneumonia. The punctures, two in number, were made over the transverse and descending colon, and gave great relief. The patient, however, died of pneumonia, but no traces of the puncture could be found after death, except on the surface of the body. The instrument used was an exploring trocar.

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### THE VALUE OF MEAT EXTRACT.

MEAT, as an article of diet, owes its value partly to the mineral, partly to the organic compounds, albuminoid and oleaginous. The mineral substances probably undergo little change in the human body, and with the oleaginous we do not now concern ourselves; but the albuminoid having been ingested, are in the stomach reduced to a uniform substance, termed albuminose or peptone, by means of the acid and pepsin of the gastric juice. But straightway the process of degradation commences, and a multitude of new compounds, kreatin, kreatinine, leucin, etc., are formed; but the force evolved in the changes is the force manifested by the body—in other words, life implies these

changes. Let it be noted now that in the *substance* of meat there is available material over and above what exists in its juice.

In the extract, substances which exist only in very small quantity in the meat are increased a hundred-fold, whilst the really important and nutritious substances are actually diminished. Animals have no constructive power that resides in vegetables. Albumen having ceased to be albumen, it can never be again converted into albumen in the animal economy; it can only proceed in its retrograde march to urea. This being so, it is evident that the nutritive value of meat in regard to its albuminoid constituents must be small. Some time ago Kimmerich astonished and, we may say, frightened the world by announcing that Liebig's extract was absolutely poisonous. In a recent article, however (*Deutsches Klinik*), he has reconsidered the subject, pointing out the actual value of the extract. First, then, it causes a sensation of warmth in the stomach, it strengthens the heart's action and the circulation generally, acting as a stimulant rather than as an article of food. In its action it is allied to tea and coffee rather than meat. So also in cases of sickness will the solution of the extract, properly flavored, prove of value as a stimulant, in the same way that a glass of wine will enable a man, immediately after he has taken it, to do what he was not able to do before. But, however useful in debility, it is now well known that wine is not food, and so also with meat extract. The real use of the meat extract, as an article of diet, is to give taste and relish to a mass of nutritive but insipid food. A patient will swallow large quantities of this extract, thinking he is imbibing nutriment proportional to the quantity of meat used in its preparation, while in truth he may swallow several ounces of it daily and yet be starving. A bone boiled with it for a time is a great improvement; thickening it with *corn-meal*, not starch, makes it of very great value. —*Medical Times and Gazette*.

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#### FLUID MEAT—DIGESTED MILK.

ACCORDING to the *Medical Times and Gazette*, Mr. S. Dailey has succeeded in preparing a palatable solution of meat in pepsin and hydrochloric acid, by the addition of a small portion of pancreas to the meat before solution. After solution the acid is converted into common salt by the addition of a little soda. This preparation is much more nutritive than Liebig's extract, containing as it does the fibrin and the nutritious portions of meat which are wasted in the making of the former stimulant. Curiously enough there is a class of patients, or rather impatient, who have already learned the value of the digested

viands. These are the London stock-brokers and other business men, who cannot allow their stomachs to use one atom of the nervous force which the brain is using in money-making, and who find the fluid meat pass into the circulation without the flatulence and stomach trouble which would attend the effort to eat ordinary meat or soup, and find it infinitely more "staying" than Liebig's extract. The use of the preparation in severe anemia, extreme dyspepsia, cancer of the stomach, obstinate vomiting, low fevers, etc., etc., will suggest itself to every practitioner.

In the same journal, June 24, Dr. James Morris details a case in which "digested milk" was employed at the suggestion of Sir Wm. Jenner, with apparently great benefit. The infant (æ. 4 mos.) was in a very precarious state, and the only other child of the mother had died under similar circumstances at the age of six months. The milk used was asses' milk; of this,  $\bar{3}$  v.; pepsin (Bullock's), gr. v.; dilute hydrochloric acid,  $\pi$ xxx. These ingredients were digested for two hours by the heat of a water-bath at 120° F. The acid was then neutralized by carbonate of soda, grs. xij., and the solution filtered. It had always a slight bitterness, which was covered by sugar and a little brandy when needed. At first this quantity was prepared twice daily, and after a short time double the quantity, the child being able to take more food. Still later other infant's food was used, but causing indigestion, was abandoned. After persevering with digested milk three months, the child became strong enough to take ordinary food, and is now in good health. Cow's milk was tried occasionally, but it was found that unless more pepsin and acid were added, much curd remained upon the filter. The removal of this is, perhaps, not a disadvantage.

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#### SOME FURTHER ADDITIONS TO THERAPEUTICS.

In a paper with the above caption, in the *London Practitioner*, Dr. Richardson states he has found bromide of quinine of value in cases where certain special symptoms followed upon syphilis. He says, a case of recurring rheumatism of this nature; a case of recurring ulceration of the fauces; a case of general nervous exhaustion, with flying pains in the limbs, loss of appetite, general debility, loss of hair, and a remaining thickening and enlargement from subo; these have been instances in which the bromide has been more immediately and determinately beneficial than any other treatment. He administers two to three grains three times a day, and notes that large doses are not followed by cinchonism.

Bromide of morphia appears to produce the narcotic effects, without the after unpleasant symptoms, of opium. Of the bromides of morphia and quinine in combination, he says, I cannot speak too favorably. Four classes of cases seem to be especially benefited by them, viz.: neuralgic fever, cerebral irritation, diabetic phthisis, and extremely acute attacks of intermittent pulse, the result of nervous shock.

In acute neuralgia I administer a drachm of the solution (containing 1 gr. of the quiniæ,  $\frac{1}{8}$  gr. of the morphia salt) to an adult every two hours until the pain is abolished, and am able to report that not only pains can be effectually removed, but that the medicine causes no derangement of the body. It calms pain without inducing deep narcotism; it interferes little with the secretions or the appetite, and rarely causes nausea. In diabetic phthisis, under its influence the quantity of sugar and fluid excreted by the urine notably decreases, cough is relieved, and recurrent hectic is held in abeyance more certainly I think than by any other remedy.

Bromide of strychnia is of value in dyspepsia from deficient nervous control over the vascular supply of the organs concerned, in cases of partial organic nervous paralysis of the ventricular division of the organic nervous system. In these cases, when the body is without food, there is no true sense of hunger, but rather of emptiness. In cases where there is much dryness and irritability of the mucous membrane of the pharynx and larynx, the bromides increase the irritation.

Dr. Richardson commends very strongly hydrobromic ether as an anæsthetic, C, II, Br. This ether is a light volatile liquid, made by distilling four parts of powdered bromide of potassium with five parts of a mixture consisting of two parts of strong sulphuric acid and one of alcohol, having a boiling point of  $104^{\circ}$  F., sp. gr. 1,400, and a vapor density of 54, taking hydrogen as a unit. Hydrobromic ether was largely used by Mr. Nunnely, of Leeds, as a general anæsthetic. An atmosphere containing 8 to 10 per cent. of the vapor causes, when inhaled, active destruction of common sensibility rapidly and safely. The breathing remains tranquil, the pulse quiet, the expression good; the transition from the first to the third degree of narcotism is, moreover, so rapid that the second degree, or stage of muscular excitement, is scarcely recognizable. There is no apnoea; and in animals, where the inhalation is carried to an extreme, the resistance of the heart to the paralyzing action of the narcotic is good. Recovery is very rapid. In animals killed by hydrobromic ether, the heart is found with blood in both sides, and free from congestion. The color of the blood is natural, and the lungs contain a normal amount. The faults of this ether as an anæsthetic are its costliness, the rapidity with which it

undergoes decomposition on keeping, and the irritation of the throat which it causes.

Bromide of methyl shares the anæsthetic qualities of bromide of ethyl, both the good and the bad.

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### TREATMENT OF DIABETES.

IN these days of almost universal scepticism on therapeutics, it is encouraging to note the numerous attempts made of late to solve the problem of the treatment of diabetes. There is, perhaps, no disease respecting which our knowledge has grown so fast, and our treatment been so stationary. Since 1797, when Rollo wrote, we have unravelled one by one nearly all the chemico-vital changes on which the morbid process depends, and now stand, as it were, on the very edge of the border-land which separates light from darkness, waiting for the secret of the disease to disclose itself. But all this advance has been in pathology; our treatment has scarcely progressed a step. We have, indeed, tried many remedies, but our results have mostly been negative. Each newly vaunted mode of cure has in turn been rejected, till opium, the old remedy, seems after all the only trusty one. The latest novelty comes to us from Italy. We learn from the pen of Dr. Sammela, in Dr. Dobell's reports on the Progress of Scientific Medicine, Vol. II., that Professor Cantani, turning back to the old theory of deficient combustion, has found a new, and according to his account, a successful remedy in lactic acid. In diabetes, Cantani holds that there is no excessive production of sugar, but only a deficient combustion, owing to the non-occurrence of the transformation of the sugar formed from food into lactic acid and fat. The sugar of the food, no longer undergoing its healthy transformation, passes off by the urine, and the patient consumes all his own fat, as well as the albuminates and fat of his food, to keep up the organic combustion. The Italian professor seems to have been led to these views mainly by the peculiarly low temperature of diabetics. Dr. Foster, of Birmingham, pointed out in the *Journal of Anatomy and Physiology*, some two years ago, that the body heat in diabetes is always some two or three degrees below that of health. This is a most noteworthy fact, and when conjoined to another fact pointed out by Foster, viz., that the temperature has no relation to the amount of sugar excreted, we have data of cardinal importance to our future study of the disease. In diabetes, we have a tissue waste so rapid that it almost rivals that of any fever, and yet the contrast with the febrile temperature is complete. Febrile wasting means increased heat; diabetic wasting means diminished heat. Can-

tani points out that with this low temperature there is often a diminution in the frequency of the respirations. In one of his cases they fell to nine per minute. On these observations he founds the theory that diabetic sugar (paragluco~~se~~ he calls it) is a non-combustible element, with which the oxygen cannot combine, and that consequently all combustion is effected at the expense of the albuminates and the fats. The oxygen finds no material on which to fix itself in the lungs; hence the low temperature and the unfrequent respirations. The remedy is lactic acid (150 to 250 grains per day). This, the professor thinks, supplies a combustible element, and so saves the albuminates and fats. A rigidly enforced animal diet at the same time diminishes the sugar formation, and the disordered functions thus placed at rest, soon recover. We hope this may prove so here as well as at Naples. Dr. Foster, who has been carefully testing in the Birmingham General Hospital the effects of a number of drugs on diabetics, has, among others, tried the lactic acid. The drugs chiefly used in his experiments have been ergot, bromide of potassium, peroxide of hydrogen, opium, and lactic acid. The results are as follows: The effects of ergot are limited to a diminution of the water passed, the sugar not being affected. Bromide of potassium, which Dr. Austin Flint recently proposed, Dr. Foster finds has no effect on the sugar excretion; the good results observed by its proposer were doubtless due to the restricted diet with which it was combined. In one case bromide of potassium, when given with tr. ferri perchlor., acted more beneficially than did either remedy alone; the sugar secretion falling some 18 grains per oz. under their use, the other conditions of diet, etc., as far as could be ascertained, remaining the same. Peroxide of hydrogen, although a popular remedy with patients, was found to have no effect on the daily loss of sugar. Opium in several cases diminished the quantity of urine passed, diminished the loss of sugar, and greatly checked the elimination of urea. The good effects which follow its use Dr. Foster is inclined to attribute more to its decided effect on the urea elimination than to its less marked effects on the sugar loss. The lactic acid has only recently been tried, but so far its effect has not answered the expectations raised by Cantani. The sugar has not been noticed to fall steadily under its use; falling one day, it has risen the next. The quantity of urine has not been diminished by it, nor in the case in which it was used longest did the temperature of the body rise or the weight of the patient increase. Dr. Foster has remarked, however, a peculiar effect from the use of lactic acid, viz., the occurrence of pains of a rheumatic character in the joints and limbs; these were so severe in one case as to necessitate the discontinuance of the treatment. With reference to the infrequency of respiration, this has not been noticed by Dr. Foster, even when the temperature has been lowest.—*Doctor.*



### ON THE HYPODERMIC USE OF CORROSIVE SUBLIMATE IN SYPHILIS.

In a paper upon this subject in the *New York Medical Gazette*, Dr. R. W. Taylor lays down the following aphorisms, as based upon a large experience :—

1. That the use of the bichloride of mercury in hypodermic injections, though a method of treatment possessing certain advantages, is, for various reasons, of limited application.

2. That it is useful in the whole secondary period of syphilis, in roseola, and in the various papular syphilides, and in that form of pustular syphilide in which there is only slight tendency to the formation of pus.

3. That it very rapidly cures all syphilitic neuroses, and that it is very beneficial in the cachexia of syphilis, whether accompanied or not by perceptible lesion.

4. That it possesses no advantages over other modes of administering mercury in the treatment of mucous patches and condylomata lata; and that these lesions yield more rapidly to a local than to any form of constitutional treatment; and that in the syphilitic lesions of the nervous system and of bone, particularly if late, its use is not to be commended.

5. That the very early tertiary syphilitic lesions, provided they are not of an ulcerative character, may be very much benefited by it, and that the simultaneous administration of iodide of potassium internally may produce a cure more rapidly than when the two are given internally.

6. That the peculiar advantages of the treatment are: the smallness of the amount of mercury used; the rapidity of action; and the absence of systemic disturbance.

7. That a very minute quantity of mercury, averaging from two to three grains, thus administered, may cause the disappearance of very extensive syphilitic lesions, and the alleviation of very severe symptoms.

8. That in the greatest number of cases, an injection every second day of an eighth of a grain of the bichloride of mercury will produce a cure in rather less than two months, and that in very urgent cases they may be pushed, with good effects, to the extent of one or two daily.

9. That the rapidity of cure is the rule rather than the exception, and that the time required may be stated as varying between three weeks and two months.

10. That when the injections are given every second day it is very

rare to observe any unpleasant systemic effects of the mercury ; and that even when they are pushed more than this, these effects are never as severe as when mercury is pushed to a similar extent by the mouth.

11. That the relapses after this treatment are equally as frequent, as rapid, and as severe in character, as when mercury is given in other ways.

12. That there are unpleasant local effects of the injections, such as pain of the puncture, pain over the site of injection, induration of the connective tissue, and abscesses.

13. That in many cases the pain is very slight, and soon ceases to trouble the patient ; but that in others it is so severe and persistent as to necessitate a discontinuance of the treatment ; and that in every case some slightly unpleasant local effects are experienced from the use of the injections.

14. That in exceptional cases, the injections cause a low grade of inflammation in the subcutaneous connective tissue, producing a decided induration in deep portions of the derma ; and that, owing to complications which might, perhaps, arise from this condition later on, it is advisable to discontinue the injections in these cases.

15. That this induration may be observed in many cases in which it is only of an ephemeral character.

16. That if proper care is used in administering the injections, abscesses will rarely, if ever, occur.

17. That it is absolutely necessary that the patient should be both intelligent, and, at the same time, thoroughly impressed with the gravity of his disease, in order that he may comprehend the advantages he is to derive from this mode of treatment ; otherwise, he could not subject himself to the inconveniences which are inevitably experienced in the course of the treatment.

18. That while in dispensary and hospital practice the injections may be frequently given, in private practice the smallness of a patient's means may often be an obstacle in the way of the continuance of the treatment.

Finally, that, while in some cases the treatment may be useful by reason of its rapid action, and in others for the smallness of the dose, the inconveniences which it produces, the objections of the patients, and the presence of lesions which contra-indicate its use, confine its sphere of usefulness to very narrow limits.

Dr. Taylor gives an eighth of a grain at a dose, dissolved in twelve drops of water. He thinks much less irritation is produced in this way than by the use of a weaker solution. In order to avoid pain in the operation it is best to have an exceedingly fine nozzle tube to the syringe.

## TREATMENT OF GONORRHEA.

DR. H. F. PATTERSON, Royal Artillery, writes to the *London Lancet*, June 24, 1871, substantially as follows:—

For a considerable time I have been in the habit of treating my cases of this affection with water injections only, and I do not remember a single case of failure where the system was adopted at the commencement of the disease and employed throughout. I begin with injections of lukewarm water, continued till the chordee and scalding cease, after which cold water is substituted and continued till cure. My instructions are to use the injections freely once an hour during the day, and as often at night as can be done conveniently. I generally give a little saline mixture internally, as a laxative, but do not consider this essential to the treatment, the principle of which is to keep the mucous membrane clear and, as much as possible, free from its own unhealthy secretion. Cubebs, copaiba, and the other unpleasant nostrums of gonorrhœa I have long since ceased to employ. My cases get well in a shorter time than under any treatment I have tried, and are free from unpleasant sequelæ. Epididymitis is very rare; gleet will, I believe almost never occur if the treatment be well carried out. Without any statistics at hand, I believe the average duration of treatment is from ten to fourteen days.

M. E. Noble Smith recommends the following plan, the case being seen at the commencement of the attack. A mild purgative may be given, but is generally best avoided as conducive to after-irregularity of the bowels. A glass of warm milk in the morning, before rising, often has the desired effect. The diet should be regulated, and all food should be of plain character. Meat should be fresh and not preserved; coffee and tea, condiments, beer, spirits, wine (except a little dilute claret) must all be strictly forbidden. The patient should not be allowed to take any exercise, and therefore the quantity of his food must be diminished. Early going to bed is good. A mixture "containing conium and mucilage, or equivalent substances," should be given several times daily, and *when all inflammatory symptoms have subsided*, simple astringent injections will soon effect a cure. Acetate of lead is generally the best; but if a cure does not speedily follow, other mild astringents may be used, the rule being, if the case be obstinate, to vary the injection at short intervals.—*London Lancet*.

## ON THE VALUE OF TORSION AS A HÆMOSTATIC.

BY DR. CHAS. PHELPS.

IN this paper Dr. Phelps, after detailing several cases in which he employed torsion, and stating that in his experience the method has never failed, continues substantially as follows:—

The torsion of arteries, first methodically practised by Amussat, and more recently recalled to notice by Professor Syme, has been very thoroughly studied and described, especially by Mr. Bryant, of Guy's Hospital. The subject, condensed from various writers, may be thus stated in some of its most important points:—

First. Torsion is practised by two methods.

In *free torsion*, the artery is twisted at the end without being fixed above. This may be accomplished without drawing the artery from its sheath, and without twisting off the end included in the forceps (Thierry); or the artery may be detached and withdrawn from its sheath for two-thirds of an inch, and the torsion continued till the end is severed (Fricke).

In *limited torsion*, the artery is drawn out from its sheath half an inch, and fixed transversely at the margin of attachment by one pair of forceps, while with another pair the end is twisted off (Amussat).

Second. The physiological effects of torsion on the vessels, as ascertained by Mr. Bryant's experimental and cadaveric observations, are: Twisting of the external coat, and division, retraction, and incurvation of the middle and inner coats, with formation of a clot extending from the point of contact of the divided coats to the origin of the first branch above. A second clot may also extend from the same point to the twisted end below. There is no tendency to untwist in the cellular coat, and its vitality is not impaired; the twist is permanent. The divided and retracted coats are ultimately consolidated by the inflammatory process.

Third. Free torsion is the method to be chosen for most, if not for all, arteries, fixation not being necessary to prevent detachment of the vessel from its sheath. Whether the artery be fixed or not, the end should not be severed. It is unnecessary, since the artery does not untwist without it when the torsion is properly made with a proper instrument. It is unsafe, since the clot is liable to be disturbed and the incurvation of the divided coats destroyed, and experience shows that hemorrhage does thus occur.

Fourth. Torsion is preferable to the ligature for all arteries:

1. Because the safeguards against hemorrhage are greater and more numerous. There is more complete division and greater retraction of the middle and inner coats, and superadded valvular incurvation. The

twisted cellular coat and incurved middle coat are permanent as well as temporary hæmostatics. In the use of the ligature, inflammatory adhesion is the only permanent hæmostatic. Atheromatous arteries thus become more amenable to control.

2. Because, as the twisted end does not slough, there is nothing left in the wound to maintain irritation or to favor inflammatory processes by which hemorrhage may be produced, even though the occlusion of the orifice of the vessel remain perfect.

3. Because it leaves no excuse for failing to secure all the vessels in a wound, however numerous or small, and thus tends to diminish septic material.

4. Because the wound may be more perfectly closed, and the chances of union by first intention thus increased.

The advantages above claimed for torsion are scarcely open to question. Its safety and reliability are sufficiently proven by the experience of Guy's Hospital alone, where, as I am informed, no ligature has been employed for more than three years. My own limited observation has satisfied me that the facility and rapidity of application will depend upon the manual dexterity and skill only to be acquired by practice, and upon the character of the instrument employed. With a proper instrument, however, I believe that the arteries as a whole, large and small, can be more rapidly secured in this way than by the ligature. The ordinary forceps ought not to be trusted; the blades are too narrow, and are liable to tear the vessel, besides being unfitted to bear the strain of torsion. The English instruments for the purpose which I have seen, though combining the most essential characters, and apparently reliable and safe, are awkward to use. Dr. Simms has replaced the slide by a spring-catch, and modified the form of the blades, thus materially perfecting the instrument. I am now using an instrument made by Mr. Ford, of William street, in accordance with some suggestions which I have given him. It retains the long handles and spring-catch of Dr. Simms, but has fenestrated blades. It is thus a combination forceps, which can be used for ligation as well as torsion. It is readily applied over the tenaculum with which the artery is seized, and will always twist accurately in the axis of the vessel. Finally, it is equally applicable to arteries of every size.

The number of twists required is said to vary from three to six, according to the size of vessel.—*The Medical World*.

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**Milk as a Prophylactic against Lead Poisoning.**—According to M. Peligot, the free daily use of milk by workers in lead has seemed to be of service in warding off saturnine poisoning.—*Journal de Médecine et Chir. Prat.*, March, 1871.

## PHYSIOLOGICAL EFFECTS OF COFFEE.

AN interesting communication was recently made at a meeting of the Academy of Sciences in Paris, in regard to the value of coffee as an article of food. Attention was called to a statement of Mr. Gasparin, in 1850, that the miners of Charleroi preserved their health and great vigor of muscular force by the use of less than half of the nutriment indicated as necessary by theory and daily observation. Using food containing less nitrogen and carbon than the daily ration of the monks of La Trappe, whose countenances are pale, and who exercise scarcely one-fifth as much as an ordinary workman, these Belgian miners were most industrious and energetic in their labors. The secret of the difference was stated by Mr. Gasparin to consist in the use every day by these miners of a pint of an infusion of about an ounce of coffee prepared in two quarts of water, which served the purpose of counteracting the injurious effect of an insufficient supply of food.

Reference was also made to an experiment in 1860, by Mr. Jousand, in which, by the use of a decoction of about an ounce and a half of powdered coffee, a young man was kept, with no other food whatever, in good health and strength for seven days, during which time he took more active muscular exercise than usual, without any special inconvenience.

The particular deduction from these experiments appears to be that coffee has an important action in preventing denutrition and emaciation. An illustration of this is seen, according to the author, in the effect upon the urea. In one experiment about half a grain of caffein was consumed daily, and the amount of urea was diminished twenty-eight per cent.; while an infusion of about two ounces of roast coffee diminished it by twenty per cent. This is asserted to be the result of very careful experiments of a physiologist upon himself, proving that caffein and roast coffee diminish the oxidation of the system, and temper the process of denutrition. The excessive frequency and intensity of the beating of the heart was also found to be reduced in several instances. It is probable, according to the author, that a similar action is exerted by some other substances—the Paraguay tea, especially, which, it is well known, enables the natives of the Andes to subsist for a long time on an incredibly small amount of food.—*Druggists' Circular*.

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REMARKABLE CASE OF CONSTIPATION CURED ON THE FORTIETH DAY BY INDUCED ELECTRICITY.

MME. DE —, aged twenty-four years, had suffered from repeated attacks of rheumatism and of constipation. She was taken in

with a fresh access of the latter, and used against it the usual remedies; these failing, castor-oil, belladonna, according to the method of Trousean, nux vomica, aloetic suppositories, abdominal frictions with tincture of aloes, drastic injections, croton oil, etc., etc., were all employed in vain. On the fortieth day the usual symptoms of protracted constipation became very alarming, threatening death. The negative pole of the medical electrical battery of Gaiffe was then introduced into the rectum, the positive being placed over the umbilicus. A current at first exceedingly feeble was passed, but its strength was steadily increased, so that at the close of a séance of twenty minutes it had become very powerful. The pain was borne with great resignation and patience, the reward of which was a free passage from the bowels ten minutes after the battery was removed. All the general symptoms were immediately relieved by the stool.—*Bulletin Général de Thérapeutique*, June 15, 1871.

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### ON THE EXCLUSION OF LIGHT IN THE TREATMENT OF SMALL-POX.

BY W. H. BARLOW.

THERE can be no doubt but that the exclusion of light exerts a retarding influence upon the progress of the pustules in their later stages, so that, instead of acuminating, they shrink and shrivel about the sixth or seventh day of the eruption. The effect of this is to prevent destruction of tissue and much of the consequent pitting. That light has an influence on the pustules has been shown by an experiment (*Lancet*, 1867) in which one portion of the face was covered by a warm-colored gelatin (to exclude actinic rays), and the rest of the features left exposed. After recovery there was a very pronounced difference between the two sides. The use of arsenic Dr. Barlow does not think of much importance, cases treated simply with acetate of ammonia apparently doing as well as those with arsenic. Within the last four years, until the present epidemic, Dr. B. has had very numerous cases, and has not had one patient badly marked or left with injury to the eyes. The present London epidemic he thinks very severe, and he has recently lost four cases. He says, so great is the effect of the exclusion of light upon the maturation of the pustules, and so rapid in these four cases was the sinking and death, just at the period when the pustules would, under the stimulus of the light, have acuminated and ripened, that I have been led to believe that there might exist between them the relation of cause and effect, and that the patients have sunk overpowered by the virulence of the poison, which has, by the

obstruction of the accustomed stimulus, been prevented from taking its natural course to the skin, in the same way as death may occur from the suppression of the exanthem of scarlatina or measles. In all the cases the death was from sudden collapse; the pulse very little altered in quickness, but weak; the surface pale and shrunken; and stimulants seemed to have no effect. Now, although deaths of this kind are by no means infrequent in malignant small-pox, even when exposed to the full effects of daylight, yet it would be but seldom that four such cases would occur almost consecutively; and the shrinking in these cases of the pustules which preceded death, so exactly corresponded with that observed in the cases which did well and which was then looked upon as the desired effect of the exclusion of light, that my mind is irresistibly impelled to attribute it to that cause, and these deaths to its consequences. Dr. Barlow afterwards suggests that it would probably be equally effectual to exclude in small-pox cases the actinic rays of the light as to exclude all; and if so, in that way much of the depressing mental effect of the darkness might be avoided.

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#### GLYCERINED VACCINE LYMPH.

ACCORDING to the *Medical Times and Gazette* (June, 1871), the experience of the late war has completely established the value of glycerine as a diluent of vaccine lymph. By its use only could the great demand for virus to revaccinate the soldiery have been met. As showing how much can be done with a very little virus, the following statement is of great interest. The medical officer of a German military prison found that small-pox was rapidly spreading among the inmates, and that there were 5,142 men in urgent want of revaccination. Three infants were vaccinated with glycerined lymph from Berlin, and with the lymph derived from these, diluted with glycerine, fifty men were revaccinated with such brilliant results, that fourteen days after the commencement of revaccination, the surgeon was possessor of fifteen grammes of glycerined lymph, only half of which was used in revaccinating 4,000 men in the next eight days. According to Dr. Müller, the most certain mixture consists of one part of lymph, two parts of pure glycerine, and two of distilled water. As no solution of the lymph takes place, the glycerine lymph must be well mixed up again each time before using it. Dr. Wiener, of Cuhn, vaccinated in 1870 1,600 children, with only five failures, the lymph used being in the proportion of one to three or one to four of glycerine. The course of the pustules was in all cases normal. Some of the glycerined lymph was eight months old. In preparing the mix-



ture, he empties the lymph which has been collected in one of Bretonneau's tubes into a small porcelain saucer, such as is met with in color-boxes. To this he adds, by means of capillary tubes of about the same calibre, a mixture of equal parts of distilled water and glycerine, stirring with a glass rod. The mixture should be stored away in capillary tubes, in a cool and dark place.

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**Abstinence from Liquids in Pleuritic Effusion.**—In the *Medical Times and Gazette*, Jan. 1872, is reported a case of Dr. Moxon's, in which rapid absorption of an enormous pleuritic effusion followed the restriction of fluids injected to ten ounces and the administration of 5 grs. each of iodide of potash and chloride of ammonium three times a day, with bitartrate of potash in the mornings.

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#### THE PHYSIOLOGICAL ACTION OF BEEF-ESSENCE AND THE POTASH SALTS.

UNDER the above title Gustave Bunge publishes an elaborate paper, the more important points of which are contained in the following translation :—

Beef-essence and beef-extract are among the most used agents of modern therapeutics, and for a long time were supposed to contain the substance of the meat. When under rigid experimentation this was discovered not to be the case, and it was found that beef extract contained little or none of the nutritive portion of the meat, Liebig asserted that the muscular extractives, especially the kreatin and the kreatinin, were of value as a working material for the muscles of the economy. This assertion was shown to be incorrect by the experiments of Meissner and of Voit, who proved that the kreatin and kreatinin were excreted unchanged from the kidneys.

Kemmerich then, in an elaborate paper in the *Deutsche Klinik*, investigated the matter, and arrived at the conclusion that beef-extract is a stimulant, strengthening the heart's force and acting generally more like tea or coffee than like a food.

Kemmerich had noticed that after an injection of concentrated flesh-broth into the stomach of a rabbit there followed increase of the rapid-

ity of the heart's action, and finally death from the paralysis of the heart. He ascribed these results to the influence of the potash salt upon the heart, as he found the same results follow the similar use of the ashes of the meat, in proportional quantity. The quickening of the pulse by a potash salt is, however, in direct contradiction to the experiments of Traube, Guttman, and Podkopaew, and it was especially to this point that the researches of G. Bunge were directed. He found by chemical analysis that Liebig's extract contains, besides water, 21.9 per cent. of inorganic matter, about half of which is potassa, and of the remainder about  $\frac{2}{3}$  is soda and  $\frac{1}{3}$  phosphoric acid.

The first set of experiments were directed to seeing if the extract had any appreciable effect in quickening the pulse of the dog, or in elevating the temperature in the rectum. The chief difficulty in this is found in the repugnance both of the dog and his stomach to the material; but by making it into pills it was finally given and retained for two hours before vomiting came on. The result of the carefully conducted experiments was entirely negative; the largest doses that could be given failed entirely to elevate the temperature or pulse.

These experiments were followed by similar ones made upon himself; every precaution was taken to avoid all disturbing influences, and the result confirmed entirely the previous ones. Owing probably to the perfect quietude preserved, the pulse actually fell in some of the experiments. No increase of the bodily temperature or the pulse rapidity could at any time be discovered following the ingestion of the extract.

The experiments of Kemmerich on rabbits were then carefully repeated, and similar results obtained. Always following the injection of the beef-extract into their stomachs, there was very marked increase of the pulse rapidity, and finally, if the quantity were sufficient, gradual death from paralysis of the heart. The agreement with Kemmerich's results was complete, even as to the quantity necessary to produce death.

The potash exists as a phosphate in the flesh-extract, and Herr Bunge now injected an amount of the pure salt, equal to that contained in the fatal dose of extract, into the stomach of a rabbit, with the same results as Kemmerich, namely, great increase in the rapidity of the heart-beat, and then death from paralysis of the heart.

The resulting paralysis is in complete accordance with the results of all investigations of the action of the potash salts, and is, no doubt, a direct action of the potash of the extract; as to the increase in the heart's rapidity, that is another question. By direct experiment our investigator found the mere gagging and introducing of the stomach-tube was sufficient to influence for a considerable time the heart's action; but

that after this, injection of distilled water, of solutions of sugar, soda, and potash salts, and of beef-extract, all caused very marked increase in the rapidity of the heart's beat. In the case of the warm water this increase was not nearly so lasting as when the saline and saccharine solutions were used. The syrup was especially active in this respect, and the author thinks the increased activity of the heart is simply owing to the effect of the liquid on the intestinal canal and stomach, and that the differences in the endosmotic action of the various fluids is indirectly the cause of the different degrees of their action. All the evidence seems to bear out his conclusion, that there is no proof that the increased rapidity of the pulse, after the injection into the stomach of a rabbit of a solution of beef-extract or a potash salt, is due to a direct action of the latter on the heart.

Mr. Bunge also studied the action of the potash salt upon the rabbit when injected subcutaneously. He found that after the injection of a fatal dose of a potash solution, there was, after a period of increased rapidity, lessening both of the rapidity and force of the heart's contractions, and finally death. When a not fatal dose was used, there was a decided increase in the rapidity of the pulse. Our author attributes this increase to the pain caused by the injection, but did not prove it, not being able to devise an experiment which should avoid the local action of the salt. The pain produced was very intense, and may have been the cause of the increase of the heart's action, as is made more especially probable by the fact not noticed in Mr. Bunge's remarks, but evident in his notes on the experiments, that when the potash was injected into the jugular vein no increase in the rapidity of the pulse occurred.

Experiments upon dogs and cats yielded similar results; the slowing of the pulse was only seen in fatal cases, when death took place through gradual extinction of the heart's action.

Various experiments were also gone through to test the effect upon the arterial pressure. In some a slight increase, in others a slight decrease of the arterial pressure was produced by the injection of the salt into the jugular vein; only after fatal doses was there a decided reduction of the force of the heart. In one case immediate arrest of the heart's action followed the injection.

The nitrate of potash, given to men in doses as high as two and a half drachms, produced no perceptible influence on the pulse or temperature, and heart poisoning from the salt taken into the stomach is shown to be impossible, the quantity required being so great that it would of necessity be rejected.

In conclusion, Mr. Bunge thinks it cannot be longer denied that the beef-tea or beef-essence is really of no use except on account of its taste, which it may impart to a mass of otherwise insipid vegetable

food. The feeling of refreshment following beef-tea, he thinks, is only due to its being taken hot, and to its taste having a psychical influence. —Pflüger's *Archives für die gesammte Physiologie*, 1871, p. 238.

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### ON THE MEANS OF TEMPERATURE LOWERING.

UNDER the above caption Dr. Wjatscheslau Manassein publishes, in Pflüger's *Archives für die gesam. Physiologie*, p. 283, 1871, a paper of twenty pages, whose study we commend to any one interested in such subjects, as being full of instruction as to the method of such experimentation. We have only space for his results. He found that merely swinging rabbits in a box was sufficient to cause a depression of temperature varying from  $1.2^{\circ}$  C. to  $0.3^{\circ}$  C., the average of fifty-six experiments being  $0.66^{\circ}$  C. That this was not owing to cooling by the currents of air, was demonstrated by the fact that wrapping the animal in cotton-wool did not alter the result; that when a short, rapid vibration was used the lowering of the temperature was less marked than when a long, slow swing was employed, and that the lower point was not attained until some time after the cessation of the motion, generally about thirty minutes. Whether the axis of the swinging motion corresponded to or was at right angles to the long axis of the body did not affect the result, and the experimenter thinks that this shows the results were not due to interference of the motion with the circulation. Bandaging the eyes intensified the fall of temperature, the result being, in fourteen experiments, maximum  $1.4^{\circ}$  C., minimum  $0.3^{\circ}$  C., average  $0.79^{\circ}$  C. On the other hand, if a band was drawn around the throat, so as to decidedly interfere with respiration, the animal remaining quiet, the repression of temperature was much less.

It has been shown by the experiments of Gscheidlen that the activity of the respiratory centres in the medulla oblongata is lessened by morphia, even in small doses; and previous experimentation having shown Dr. Manassein that whilst large doses of morphia depressed the temperature, small doses had no such effect, but at times were even followed by a rise of temperature, it occurred to Dr. M. to try the influence of small doses of morphia in the swinging experiment. The result was, that in thirty-seven out of forty-five experiments the swinging was not followed by any fall of temperature, small doses of morphia having been previously administered. Twenty-eight experiments were tried upon rabbits, in whom pyæmic fever had been caused by the injection of putrid matter. The results were, that in the feverish state the swinging has the same effect as in the natural condition, and that by

repeated swingings it is possible to depress the temperature to the normal point, and that the swinging has less action at the time when the fever heat is rising than at periods when it is falling.

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### DISINFECTION.\*

A DISINFECTANT is, in the broadest acceptance of the term, anything which counteracts infectious, contagious, or effete matter. How a few disinfectants produce their effects is perfectly understood, and presents no kind of mystery; how other disinfectants work is matter of dispute, and regarding the action of a good number of them we have as yet hardly arrived at the stage of controversy.

The material whose effects are to be opposed by disinfectants is held by some authorities to be animal or vegetable germs, and by others to be subtle organic poisons of surpassing power; and possibly enough may be of all these kinds, but must at any rate consist of complex organic matter. In common with all organic matter, the matter of contagion may be destroyed, and therefore rendered inoperative, by exposure to a red heat, in presence of excess of oxygen. Fire, therefore, is a disinfectant whose action is intelligible, and whose absolute efficacy is undoubted.

The action of destructive chemical agents, such as hot concentrated sulphuric, nitric, or chromic acid, is, in like manner, quite intelligible. Disinfection by this means is even more costly than by fire.

We have instanced disinfectants which are effective and impracticable, in order to throw light on those which are practicable and not effective or much in vogue at the present time. Chlorine, which in the form of bleaching-powder is much employed as a popular disinfectant, will necessarily destroy contagious matter, as it does all organic matter, if suitable precautions be taken to insure the conditions under which it can act thoroughly. But to use chlorine under these conditions is no more practicable than to use boiling concentrated nitric acid, and the manner in which chlorine is actually used, and that which alone is practicable, is not effective.

Suppose, instead of burning the clothes of the plague-stricken patient, we were to reduce them to pulp, bleach the pulp, and make paper of it, should we get plague-paper from the plague-rags? We cannot guarantee that we should not; but if we pushed the action of the chlorine further, destroying the pulp so that it could not make paper, and until complete chemical disintegration, then we could guarantee that it would not be infectious. If, then, there be doubt whether the paper made from some descriptions of infected rags

\* Reprinted from the *Lancet*, September 30, 1871.

be infectious, what shall we say of the chances of the decomposition of infectious matter by the popular expedient of just sprinkling clothes with a little bleaching liquor? Fumigations of sick-rooms with chlorine gas are not likely to be effective, for long before the proportion of chlorine in the atmosphere could reach the point at which we could hope for any attack of infectious matter existing in the atmosphere (and certainly very long before we could guarantee any attack of the infectious matter), the smell of chlorine would have become unendurable. In fine, the actual practical employment of chlorine as a disinfectant does not rest on a sound chemical basis, and we are not warranted in assuming that any great good is done by it.

Leaving disinfectants which aim at the chemical disintegration of infectious matter, we pass on to others, the *modus operandi* of which is in dispute. Corrosive sublimate, carbolic acid, and sulphurous acid,—do they poison the germs, or are they chemically incompatible in relation to the organic poisons? We shall not discuss this question on the present occasion, but it is a fact, ascertained by experience, that these substances, in common with very many others, have some power of suspending the action of infectious matters. Of late years it has been the fashion to single out carbolic acid as pre-eminently serviceable. But Dr. Sansom, who is one of the warmest advocates of the use of carbolic acid, has shown that if we measure its activity by its power of arresting fermentation it is far behind corrosive sublimate; and if by its destructive action on low forms of animal life—on spermatozoa, infusoria, and entomostraca—it comes behind corrosive sublimate and most of the commonest acids. In short, there is no reason why carbolic acid should be so singled out, whilst its being notoriously poisonous makes it no fitter for general and popular use than corrosive sublimate.

It appears to us that, whilst possibly all may have their uses in skilled hands, for household and popular use we must avoid corrosive chemicals, poisonous substances, and bad-smelling things, and select agents which, having none of these properties, can be employed thoroughly and unsparingly. The property of deodorizing is also one which will be valued in a popular disinfectant, and since most of the common bad smells are stinking alkaloids, a great variety of substances, including all the acids, will possess this property.

In practising disinfection it has been sought either directly to influence the state of the atmosphere surrounding us, or else to operate upon the solids and liquids with which we come into relation more or less closely in the course of daily life; and if we would have definite ideas on the subject, the distinction between these two methods of operation must be kept clearly in view.

The *direct* disinfection of the general atmosphere of a town is a task too hopeless to be undertaken by man; as will be manifest from the mere consideration of the vastness of the mass of air to be dealt with, and the comparative minuteness of the materials wherewith to deal with it. Not by one-tenth per cent. can all the breathing of all the inhabitants of a town, and the burning of all the fires in it, alter either the percentage of carbonic acid or of oxygen in the general atmosphere pervading the town. If, then, our means of influencing the atmosphere are so limited that we cannot add to it so much as the one-tenth per cent. of any material, what chance should we have—even if we were to expend the entire national revenue on the undertaking—of so thoroughly dealing with the mass of the atmosphere pervading a town as to eliminate any impurity?

In the days of the cattle-plague, those who were set in authority over us made an assault of this description on the atmosphere of the country. They swept the air of the fields with towels dipped in carbolic acid, and borne aloft on the horns of the cattle, hoping thereby to rid the air of cattle-plague germs. As well might they have tried to alter the composition of the water of the Irish Sea. The first step in practical disinfection is the comprehension of the fact that, whether it be poisons or germs we fear in the out-door atmosphere, we cannot remove them from it by the employment of anything either to decompose them or to kill them.

Leaving the streets and entering the houses, one thing at least is possible, and that is, to ventilate and secure that the air within the house is not much worse than the air outside. Obviously, too, the limited air of a room lies within the compass of the action of such quantities of chemicals as we are able to command. But whether it is economical to attempt the purification of the air of a room by acting upon it by chemicals, or whether the means which are in vogue are effectual, are other questions. The last we will now take up.

We have before us a little card bearing on it the inscription, "Disinfectants, and how to use them," by Edward T. Wilson, M.B., F.R.C.P.; and among other directions are the following:—

"*For an Unoccupied Room.*—Pour two wineglassfuls of dilute sulphuric acid (oil of vitriol) over two ounces of chloride of lime in an earthenware saucer, placed high near the window. It bleaches, and is apt to make white-limed walls sweat. Useful for cabs.

"*For an Occupied Room.*—Put a crystal or two of chlorate of potash into a saucer of muriatic acid (spirit of salt) placed high, as the gas is heavier than air."

We presume that the rooms are of ordinary dimensions—say fourteen feet square and ten feet high—and for convenience of calculation

let us take the contents of a room four metres square and three metres high. This gives forty-eight cubic metres, or forty-eight thousand litres' capacity. Now, from the two ounces of bleaching powder we should do well if we got five litres of chlorine gas. We have, therefore, five volumes of chlorine in forty-eight thousand volumes of air, or about one volume of chlorine in ten thousand volumes of air; or, in percentage, 0.01. This is for the *unoccupied* room, but for the *occupied* room the proportion of chlorine (from the crystal or two) would be very small indeed.\* Chlorine so highly diluted is not the energetic reagent that it is when pure. If there were traces of sulphuretted hydrogen in the atmosphere of the room, they would coexist for a long time with so weak a gaseous mixture of chlorine, and germs would probably be untouched by it. In short, such a chlorinous atmosphere, though dreadfully disagreeable to human inhabitants, might be organically impure.

The card from which we have quoted falls foul of scents. "Scents are useless," says the card, after having recommended how we may make the sick-room stinking under pretext of purifying its atmosphere. Wiser far were it to make it fragrant with perfumes, which, if they neither decomposed the organic poison nor killed the germs, would delight and not distress the patient.

In fine, if the atmosphere of a room be foul, let it out, which is the cheapest and well-nigh the only practicable, if not the only possible, method of improving it. The proper sphere of disinfectants is the solids and liquids which harm us, either by direct contact with our bodies or by their proximity to us and action on us through the atmosphere.

When we add to the atmosphere of a room a sufficient proportion of an ordinary gaseous disinfectant to act on the atmospheric impurities, we render it unfit to breathe, and fit only to be sent up the chimney. All those mixtures for generating chlorine in dishes exposed in the sick-room, all the cloths soaked in liquid disinfectants and hung up in the room, are more or less futile for the purpose for which they are intended. In this general condemnation we do not include the use of

\* Some notion of the quantity of chemical substance requisite to effect a real disinfection of the atmosphere of a dwelling-room of ordinary dimensions may be gathered from a recent Oxford disinfection minute, which prescribes four ounces of sulphur to be burned in every 100 cubic feet of air. Sulphur yields twice its weight of sulphurous acid, so that there would be about eighty litres of sulphurous acid gas to 3,000 litres of air, equal to 2.6 vols. of gas in 100 vols. of air. The minute informs us that "no disinfection of this kind is thorough if a man can live in the room whilst it is going on," from which we see that it cannot be resorted to for the sake of the atmosphere in the room (which must be sent up the chimney or out of the window, and replaced by fresh air before the room becomes habitable), but for the sake of the walls and ceiling, and clothes hung up on poles, etc. In short, it is a method of treating the solids.



disinfectant cloths to block up window or doorway communicating between the sick-chamber and the rest of the house. This we regard as quite legitimate, and as helping to isolate the patient.

In the selection of disinfectants for use in the sick-room, we should prefer such as are non-volatile and destitute of smell,—such, in fact, as will not themselves defile the air. For this reason, among others, bleaching-powder and carbolic acid are not so suitable as some other disinfectants. Copperas and chloralum, possessing the requisite qualifications of being non-volatile and odorless, and being at the same time active disinfectants, are mentioned in the *Oxford Disinfection Minute*, which we have already referred to, and from which we quote the following :—

“ Water-closets, privies, cesspools, and drains can be disinfected by copperas (sulphate of iron). Carbolic acid can be used with advantage with, or after, but not without copperas. A certain quantity of disinfectant will disinfect only a certain quantity of foul matter ; and disinfection is imperfect till all hot smell or alkaline reaction is abolished. For the disinfection of a cubic foot of filth, half a pound of copperas dissolved in a couple of quarts of soft water is sufficient. The daily addition, by each individual using a privy or water-closet, of two-thirds of an ounce of solid copperas to such privy, or one-third of a pint of the above solution to such water-closet, will keep it wholesome, if any accumulation of filth which it may contain or communicate with has been previously disinfected according to the directions given above. Carbolic acid, which need not be chemically pure, can be used after the addition of copperas till the place smells strongly of it. It should be used in the fluid state, its combinations with lime and magnesia having an alkaline reaction, and being therefore unsuitable for the present purpose. It may be diluted by being shaken up with twenty times its volume of water, and if poured from a watering-pot with a rose-nozzle over the sides of a recently emptied privy or cesspool will do great good. Sawdust or sand strongly impregnated with carbolic acid may be used for this purpose. Chloralum (solution of chloride of aluminium of specific gravity 1160) will acidify ordinary sewage, and destroy its living organisms when added in the proportion of one part to forty. It may be expected, therefore, to act as a disinfectant. This cannot be said of chloride of lime. All water-closets and privies should, when epidemics of cholera or typhoid may be expected, be disinfected, whether they be offensive or not. It is well at such periods to avoid using any such conveniences which have not been disinfected, especially if, as at hotels and railway stations, they may have been used by persons from infected localities. All the conveniences mentioned need ventilating as much as living-rooms do.”

The subordinate position of carbolic acid is noteworthy. If the experiments and researches that have been undertaken in regard to carbolic acid be reliable (*vide* Crace Calvert, in the *Chemical News* of Dec. 9th, 1870, and Dr. Ballard's remarks thereon in the same journal of Jan. 20th, 1871), then we must admit that undoubtedly carbolic and cresylic acids are about the most powerful of antiseptics; and there are few who will not admit that where carbolic acid can be used, it is the best for direct disinfection. Its odor is *the* objection against it, but still there is a very large number of cases in which the odor of the disinfectant proves no bar to its employment.

The minute also assigns a low rank as a disinfectant to chloride of lime; and here it will not be out of place to indicate the manner in which different disinfectants act on a mass of organic matter in incipient decomposition, such as *fæces*, urine, etc.

Copperas, chloralum, and Burnett's solution (chloride of zinc) absorb the most offensive products of decomposition, which appear to be stinking alkaloids, and in so doing deodorize; they may also act as powerful antiseptics,—that is to say, arrest putrefaction, and so prevent the production afresh of products of decomposition; but more evidence is wanted on this point. Carbolic acid does not absorb the products of putrefaction which has already taken place, but it arrests putrefaction and so stops the further production of products of decomposition. Bleaching-powder and Condy's fluid (alkaline permanganate) appear to oxidize the products of decomposition, but they have little power as antiseptics,—that is to say, they have little power of preventing the organic matter from continuing to putrefy. These latter, therefore, are not so economical as other disinfectants.

For use in cesspools and drains there is at present in the market a very cheap material, known as Cooper's salts, and consisting of a mixture of chlorides. It has considerable deodorizing power. It deserves a trial in privies and urinals, and indeed is known to answer in the latter.

Leaving the water-closets and cesspools, and returning to the sick man's chamber, the first thing demanding attention is the night-stool or bed-pan, which should be charged either with a sufficient quantity of copperas or else chloralum. We think that most persons who have tried the two will be inclined to give the preference to the latter, from its superior cleanliness, and in the form of a dry powder sufficiently cheap to be used to cover the excreta it will be found very convenient. Charcoal or sand to cover up excrement and discharges of all kinds, and these moistened with copperas solution or solution of chloralum, will also answer. But carbolic acid and bleaching-powder may be used in the sick-chamber, on an emergency, when nothing better is at

hand. Chloralum is very likely the best of the non-volatile disinfectants, but its superiority to Burnett's fluid, sulphate of iron, etc., can hardly be said to be as yet established.

The clothes worn by a patient ill with small-pox or cholera should afterwards be burnt, and, as far as possible, the bedding too. Failing this, they should be boiled for half an hour with soap and water, or else exposed to a dry heat of 250° F. In order to produce an appearance of cleanliness, bleaching-powder may be used in the subsequent washing of the linen of patients suffering from infectious diseases; but it would be injudicious to rely on that substance as a disinfectant of the linen. Finally, it should be remembered that the surface of every solid which is for a length of time exposed in a sick-room inhabited by patients suffering from infectious diseases is liable to contract a taint, and will need disinfection. The surface of the patient may even be treated, and with great advantage to himself and everybody concerned. In most cases, as is now recognized, a bath will at least do no harm, and in cases of small-pox the addition of some convenient disinfectant to the bath has been found to comfort the patient.—*London Lancet*, Sept. and Oct., 1871.

### THE TREATMENT OF SYPHILIS.

DR. BUMSTEAD SAYS:—My own experience with mercury in the treatment of venereal diseases leads me to conclusions which may be briefly stated as follows:—

1. Avoid mercury in all cases of chancroids, also in all doubtful cases of venereal sores following exposure, unless the failure of other remedies and the danger of destruction of important parts leaves no other resource. Such cases are extremely rare. Experience shows that even in well-marked cases of true chancre it is better to defer the administration of mercury until secondary symptoms appear. We are, however, justified in its use in case the chancre, contrary to custom, assumes a phagedenic form; in case the patient's relations, as in matrimony, demand that the sore should be speedily healed; or in case that he himself is unwilling to submit to delay.

2. Although a true chancre will heal and secondary symptoms will disappear spontaneously, especially when favored by attention to hygienic rules, yet mercury is the only known agent which has a *direct* action upon them. In tertiary syphilis the iodide of potassium alone has a remarkable effect in dissipating the symptoms for a time, but the concurrent use of mercury is of great value in preventing their return.

3. When using mercury for syphilis, use it, as the French say, *coup*

*sur coup*—"blow on blow." In other words, give it actively and for short periods, repeated, if necessary, rather than in small and long-continued doses. Harm is less likely to result from the former than the latter course, and another advantage is that you have the means of testing the correctness of the course you are pursuing. If the disease has progressed in spite of the first thorough trial, you are probably wrong in your indications; if it has yielded but not disappeared under the first *hit*, you can hit it again!

4. When a patient for the first time comes under treatment for syphilis, mercury is usually well borne and does its work well, given by the mouth. It may therefore be administered in this way, and the greater inconvenience of its external use be avoided. During the first mercurial course that a syphilitic patient undergoes, the remedy commonly acts more effectively and speedily upon the symptoms than in subsequent courses. In the first course, also, there is greater danger of salivation; so that a patient who at this time has had his gums made tender by the administration of mercury for a few days, may, in a second or third course, be brought under the influence of this agent with great difficulty. Hence greater caution is requisite in the early treatment of syphilis; and since the physiological influence of mercury often rapidly follows the therapeutical, it is well to suspend the treatment or diminish the dose as soon as a decided effect upon the symptoms is apparent. In old cases of syphilis, especially when mercury has already been used repeatedly or for a long period, its internal administration is found to have less effect upon the disease; and although the danger of salivation is slight, yet other ill effects of the mineral—such as irritation of the intestinal canal, loss of appetite, diarrhoea, and general cachexia—are more likely to ensue. Hence, its external use is now to be preferred to its internal.

5. For reasons already given, the corrosive chloride is the least desirable of all the preparations of mercury for internal administration. I usually employ in my own practice either the *pil. hydrargyri* or the proto-iodide, or sometimes the *hydrargyrum cum cretâ*. The proto-iodide is found to be too irritating to the bowels of some patients, and in all cases should be given half an hour or an hour after meals, and not on an empty stomach. The mercury with chalk acts mildly, but effectually, when well prepared, and is conveniently combined with quinine and put up in capsules. I most frequently, however, employ the blue mass, made into pills of two or three grains each, with the addition of one grain of the dried sulphate of iron; one pill to be given, three or four times a day, an hour after eating. These pills rarely act upon the bowels or require the addition of opium.

Of the three methods for the external use of mercury more common-

ly employed—viz.: inunction, fumigation, and hypodermic injection—I decidedly prefer the first named, for which I have given minute directions in the third edition of my treatise upon venereal diseases, page 497. Moist mercurial fumigation, so strongly recommended by Mr. Langston Parker, is indeed less repugnant to sensitive patients; but, judging from my own observation, is less efficacious and less convenient, and requires more time for each bath than most patients can well spare. Moreover, unless the patient take the baths in his own room, or the surgeon administers them at his office, they must be intrusted to one of our professional bath-givers, who, as a class, I am sorry to say, are prone to wean the patient from his medical adviser, or to fill his mind with ignorant or false notions. It is pretty generally conceded by those who have made an impartial trial of hypodermic injections in the treatment of syphilis, that this method is not to be recommended for general adoption. (See a review of this method by my partner, Dr. F. R. Sturgis, in the *American Journal of Syphilography and Dermatology*, April, 1871; also, an able article by my friend, Dr. R. W. Taylor, in the *Medical Gazette* for May 13, 1871.)

Mercurial suppositories introduced into the rectum were recommended by Lebert, *Berl. Klin. Wochenschrift*, No. 14, April, 1870. I made a trial of them recently in four cases at Charity Hospital, with results so unsatisfactory in controlling the disease that I abandoned the experiment.—*American Practitioner*.

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### Treatment of Syphilis by Calomel Injections.

DR. F. ZAMBON (*Gazz. Méd. Ital. Prov. Venete*) relates how a patient with two gummy tumors, one in the groin, the other on the thigh, was treated by himself with injections in the middle external aspect of the left arm, by means of twenty-five centigrammes of calomel, performed three times in forty-three days. The two tumors gradually disappeared under this treatment.—*The Doctor*.

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### CROTON-CHLORAL.

DR. OSCAR LIEBREICH has lately been engaged in investigating the physiological and therapeutical properties of a new organic compound called croton-chloral, which is formed by conducting chlorine gas into allylene. A peculiar action of this new substance in animals is, that at first a high degree of anæsthesia in the head is produced, while sensibility in the other parts of the body remains intact. The second stage is, that the spinal cord loses its functions, and reflex excitability is every-

where extinguished. During that stage both pulse and respiration remain unchanged. The third stage, which is induced by large doses, is characterized by paralysis of the medulla oblongata, and death. Animals may, however, be kept alive by artificial respiration, because the function of the heart is not interfered with; while the ultimate effect of hydrate of chloral is to paralyze the heart. The first therapeutical experiments with the new compound were made in the University Clinique of Berlin. Complete anæsthesia of the fifth pair of cerebral nerves was produced in a child, reflex excitability in the other parts of the body continuing unchanged at the same time. Pulse and respiration remained exactly the same during the whole time of the narcosis. Further experiments on insane patients showed that we possess in croton-chloral a remedy by means of which the brain may be profoundly narcotized without any other functions being disturbed, while by chloral not only the brain, but the nervous system altogether, is rendered anæsthetic, and the heart's action is diminished, which must always constitute a source of danger.

Dr. Julius Althaus (who reports these investigations in the *Medical Times and Gazette*) considers, therefore, that croton-chloral promises to produce all the good effects of hydrate of chloral without any drawback being attached to its judicious use. Its apparently specific effects on the fifth pair of cerebral nerves make us indulge the hope that it may perhaps be found useful in that most intractable affection—tic douloureux.—*Chemist and Druggist*, Nov. 15.

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## THE ANTAGONISM BETWEEN THE ACTIONS OF PHYSOSTIGMA AND ATROPIA.

BY DR. FRASER.

IN a Preliminary Note read before the Royal Society of Edinburgh, on the 31st of May 1869, a number of experiments were described, which proved that the lethal action of certain doses of physostigma can be prevented by the administration of atropia. Further, it was pointed out that antagonism between any two substances, in the sense of the lethal action of the one being preventible by the physiological action of the other, had not previously been shown to exist by any certain and satisfactory evidence. In the various instances where experiment seemed to indicate existence of such an antagonism, sufficient proof was not given that the dose of the substance whose action appeared to be antagonized was certainly a lethal one. The conflicting opinions and doubts this fallacy has given origin to, have induced the author to follow a plan whereby it may be completely avoided.

In the first place, the minimum fatal dose of physostigma for the species of animal employed was accurately determined by a number of preliminary experiments; so that the weight of the animal being ascertained, it was an easy matter to be certain of the dose that could kill it. Then, in those experiments where an animal recovered after the administration of a dose of atropia given in combination with a dose of physostigma equal to or in excess of the minimum fatal, it was killed many days afterwards, and when the effects of the two substances had completely disappeared, by a dose of physostigma equal to or less than that from which it had previously recovered. Therefore, when the administration of atropia prevented an otherwise fatal dose of physostigma from causing death, a perfect demonstration was obtained of the power of atropia to produce some physiological action or actions that counteracted some otherwise lethal action or actions of physostigma.

In the preliminary note referred to it was suggested that as both atropia and physostigma are capable of producing a number of different actions, several of which may not be mutually antagonistic, and that as both substances are capable of producing several actions of a similar kind, considerably less potent to cause death than those by which their fatal effects are usually induced, it would probably be found that a region exists where the non-antagonized and the similar actions are present in sufficient degrees of activity to be themselves able to produce fatal results. This anticipation has proved to be correct. A large number of experiments have been made, by which the region of the successful antagonism of fatal doses of physostigma has been defined with considerable exactness. The smallest and the largest doses of atropia that are able to prevent death after the administration of different fatal doses of physostigma, and the maximum fatal dose of physostigma that is capable of being rendered non-fatal by atropia were ascertained, and it was found that beyond these various points death may be produced by combined doses of the two substances, either by some non-antagonized action belonging to one or other of them, or by a combination of similar actions belonging to both.

As the above results could be obtained only by performing a very large number of experiments, rabbits were the animals selected, it being impossible to obtain a sufficient number of dogs, or other convenient animal. The weight of animal employed was, as nearly as possible, three pounds; and when below or in excess of this a correction was made, so that each dose represented three pounds weight of animal.

In one portion of this investigation experiments were performed in which physostigma was given five minutes after atropia, both substances being injected under the skin. In the first series the dose of physo-

stigma was the minimum fatal, and the doses of atropia ranged from one that was too small to prevent the lethal action of this dose of physostigma, through a number of gradually increasing doses of atropia that were able to prevent death, until a dose was found whose administration resulted in death. Similar series of experiments were made with doses of physostigma, one and a half times, twice, two and a half times, thrice, and three and a half times as large as the minimum fatal. With the minimum fatal dose of physostigma, it was found that while .01 grain of atropia is too small to prevent death, .015 grain is able to do so; and that with any dose ranging from .015 to 5.2 grains the lethal effect of this dose of physostigma may be prevented; while if the dose of atropia be 5.3 grains or more, the region of successful antagonism is left, and death occurs. With one and a half times the minimum fatal dose of physostigma, successful antagonism was produced with doses of atropia ranging from .02 grain to 4.2 grains; with twice the minimum fatal of physostigma, with doses of atropia ranging from .025 grain to 3.2 grains; with two and a half times the minimum fatal of physostigma, with doses of atropia ranging from .035 grain to 2.2 grains; with thrice the minimum fatal of physostigma, with doses of atropia ranging from .06 to 1.2 grain; and with three and a half times the minimum fatal dose of physostigma, with doses of atropia ranging from .1 grain to .2 grain. Successful antagonism could not be obtained above this dose, and, accordingly, three and a half times the minimum fatal dose of physostigma would appear to be about the largest quantity whose lethal action may be prevented by administering atropia five minutes previously.

A similar series of experiments has been made, in which physostigma was administered five minutes before atropia, and the results were essentially the same, excepting that the region of successful antagonism was found to be more limited.

Series of experiments were also made, in each of which the doses of physostigma were the same, and the doses of atropia varied; while with each dose of atropia several experiments were made which differed from each other by a difference in the interval of time between the administration of the two substances.

It seemed of interest to ascertain what dose of atropia is required to produce death with a dose of physostigma below the minimum fatal. The experiments performed for this purpose show that when one-half of the minimum fatal dose of physostigma is given five minutes after atropia, so large a dose of the latter substance as 9.8 grains is required in order to cause death; recovery taking place with doses ranging from 3 to 9.5 grains.

The minimum fatal dose of sulphate of atropia given alone was found



to be 21 grains for a rabbit weighing 3 pounds. It is, therefore, remarkable that the  $\frac{3}{800}$  of a grain can prevent a dose of physostigma, equal to the minimum fatal, from causing death, and that the  $\frac{1}{4}$  of a grain is capable of rendering non-fatal a dose of physostigma equal to three and a half times the minimum fatal.

Excepting dilatation of the pupils, these minute doses of atropia, and, indeed, any dose capable of antagonizing the lethal action of physostigma, are unable to produce any symptom recognizable by a mere inspection of the animal. Still, they undoubtedly produced energetic physiological effects—effects, however, which it is unnecessary to describe in this brief abstract. It is sufficient to point out that the notion which exists in many quarters, that rabbits can scarcely be affected by atropia, is an erroneous one.

Without referring to the other results obtained in his investigation, the author pointed out, in conclusion, that unless the antagonism between any two active substances be examined in the manner indicated in this communication, no satisfactory proof of its existence can be obtained. The superficial area of the region should always be defined, otherwise indications of antagonism obtained by one observer will be liable to be discredited by those who subsequently examine the subject. The first observer may succeed in performing an experiment within the area of successful antagonism, and thus feel satisfied of its existence; but his successors may fail in obtaining any proof by so varying the dose of one or other substance as to pass the limits of the region of success. Feeling assured that many examples of successful antagonism, besides the one he had the honor of bringing before the Society, will yet be discovered, the author could not avoid the conclusion that the imperfect methods of investigation hitherto pursued are accountable for the absence of success that has attended the numerous researches made on this subject—a subject, it need scarcely be added, of the greatest importance to toxicology and to scientific therapeutics.—*Abstract of paper read before the Royal Society. Edinburgh Medical Journal.*

## ON THE THERAPEUTIC VALUE OF NITRITE OF AMYL.

BY H. C. WOOD, JR., M.D.

It will be remembered that the conclusions arrived at in my paper upon the nitrite of amyl, which was published in the last number of this Journal, were, that in its action on animals it is an almost universal sedative, impairing the power of muscular fibre to contract, and the nerve to carry the motor impulse; lessening the reflex excitability of

the spine, etc., and acting similarly, though much more feebly, on the centres of sensation and consciousness. As regards the circulation, its uniform action was to lessen arterial blood-pressure, although at first this diminution of force in the circulation is associated, at least in the dog, with a wildly excited action of the heart, without loss, and possibly even with gain, of power in the individual heart-beat; in a little while, however, the heart itself manifests very plainly the sedative influence. It was further shown that the nitrite of amyl catalytically arrests oxidation.

These views are apparently not in accordance with the theories of some previous writers, that the nitrite acts upon man as a powerful stimulant. The systems chiefly affected, *i.e.*, motor and circulatory, are so consonant in their functions throughout the higher vertebrates, as to render it inconceivable that a drug which acted as a uniform depressant upon the lower animal should be a stimulant to man. Fortunately there have not been as yet any cases of human poisoning by the drug, and no one in experimenting upon man, that I know of, has as yet carried the effect far enough to produce serious spinal symptoms. Strychnia, woorara, calabar bean, etc., affect the motor apparatus of man as they do that of the dog; and there is no reason for believing that the nitrite of amyl differs from them in this respect. In a case of Dr. Da Costa's, the remedy which he had used with good effect was administered too freely during his absence from the city, by another physician, and produced alarming general prostration; the evidence, as far as it goes, therefore favors the view so strongly commended by *a priori* reasoning.

The most prominent symptoms induced when the nitrite of amyl is inhaled by a man in moderate quantities, are a sense of great fulness and distention of the head, amounting at last to severe pain, and accompanied by intense flushing of the face, a deep, labored respiration, and an exceedingly rapid, violent action of the heart.

It is these latter symptoms which have been looked upon as demonstrating that nitrite of amyl is a direct vascular stimulant. I think, however, they have a different significance. The sensations in the head and flushing of the face are evidently explainable as being the results of the dilatation of the capillaries. The excited, violently labored action of the heart is no indication of increased arterial blood pressure, since it is precisely what is seen in the dog under similar circumstances, associated with lessened arterial pressure. If the windpipe of a man or animal be suddenly compressed, the same violent respiratory efforts and the same wild tumultuous action of the heart result, and, I believe, from the same cause. When the nitrite is taken into the lungs it instantly arrests or diminishes oxidation, and a thrill of impending

suffocation runs through the system, in obedience to which the respiratory and circulatory organs gather up and exert to the utmost their forces. The central impulse sent to the cardiac and respiratory muscles is at first much more than sufficient to overcome any direct action of the nitrite upon them, but the inhalation being persisted, in the impulse is constantly growing weaker, and the direct influence of the drug stronger, so that there soon comes a time when the reverse is true, and the heart's power is more or less nearly extinguished. Any one reading the account of the experiments previously given, can note this as true in regard to the dog, and some who have administered the remedy to man with a little too great boldness have been sorely frightened and puzzled by the same phenomenon. This loss of power comes on too quickly, is too great and progressive, and is too clearly connected with the presence of a certain amount of the nitrite in the system to be explained as a mere secondary depression from over-stimulation. Those who have watched the steady whirr of the heart in a case of atropia poisoning, know how it often takes hours of intense action to exhaust the viscus. Nor is the loss of heart-power at all comparable to the deadly paralysis sometimes produced by chloroform. It comes on gradually, rapidly to be sure, but still by degrees, and not abruptly, and, as before hinted at, is always proportional to the dose. For these reasons, I do not see how the phenomenon can be explained otherwise than above, and believe it fairly demonstrated that nitrite of amyl acts upon man precisely as upon the lower animals. A recent writer in the *London Practitioner* deems the fact that the nitrite relieves the paroxysms of angina pectoris sufficient to prove that it is a stimulant. The truth is, we have no positive knowledge of the real nature of the disease alluded to. How futile then to attempt to explain the physiological action of a medicine by its effect upon it. This attempting to study physiologically a not understood medicine by its influence upon a not understood pathological condition, is unfortunately not new in medical annals; to complete its absurdity is only needed the common practice of explaining also the disease by the influence of the medicine upon it. Surely this reading the unknown by the unknown resembles the youthful gambols of a kitten in pursuit of its tail—a circle of useless labor.

The question now arises, of what practical value is the nitrite of amyl? Its peculiar physiological power of checking oxidation and lowering temperature suggests its use in fevers, when it is desirable to lessen the rapidity of the tissue changes. Its action upon the nervous and circulatory systems would, however, very possibly, do more harm in a low fever than its other powers would do good. I have, however, no clinical evidence to offer, and therefore the matter must be left as

a simple suggestion. There is one disease in which, theoretically, it ought to be of great value, *i.e.*, tetanus. There is scarcely any doubt but that there exists in that affection a condition of exalted functional activity of the reflex motor centres, and of these centres the nitrite is a powerful depressant. Moreover, in many cases of tetanus there is an enormous rise in the activity of oxidation, and, consequently, of temperature of the body, so that the nitrite would meet a second indication. Clinical evidence also is not altogether wanting, and although not enough to warrant any conclusion, is sufficient to encourage further trials.

Two cases of recovery from tetanus are reported in the *Lancet* of the present year (vol. i. p. 572), one of which was treated by nitrite of amyl alone, the other by it and chloral. I am under the impression that another successful case has been reported, but cannot refer to it.

There is one fearfully painful affection, namely, angina pectoris, in which a considerable amount of clinical evidence shows the nitrite of amyl to be of very great value. Quite a number of cases have been reported, in which the inhalation has been of very great service in affording rapid and permanent relief. Nor are these cases limited to true angina pectoris, in which there is no evident organic cardiac disease; on the contrary, many of the patients have been sufferers from very well marked valvular disease. Among the cases reported the following may be cited, the reporter's name and journal being alone given: Brunton, *London Lancet*, 1869; and *Medical Times and Gazette*, 1870; Leishmann, *Glasgow Medical Journal*, August, 1869; Haddon, *Edinburgh Medical Journal*, 1870; Anstie, Thompson, *Medical Times and Gazette*, 1870; also, *Clinical Society's Transactions*, vol. iii.

I have had an opportunity of using the nitrite in one case of severe suffering connected with valvular disease, and the effect in relieving the heart-pang after the failure of other remedies was astonishing. The following *résumé* of the case is offered:—

H. D., colored; female; æt. 21; sick in Philadelphia Hospital with chronic pneumonia and heart symptoms, believed to depend upon chronic mitral disease. There was alight increase of cardiac dulness, with a soft but loud systolic murmur, loudest at the apex, but audible at the base, and very distinct between the shoulders.

*Feb. 20.*—Commenced to suffer with paroxysms of severe pain in the region of the heart, with suffocative feeling; chiefly complained of a griping sensation, as if some one was holding and choking her in the cardiac region. She stated that she was in agony, and appeared to suffer violent pain. Various remedies were used without decided relief; I copy now from my note-book.

*March 2d.*—Suffered from anginoise attack last night; during a "spell" this morning was allowed to inhale nitrite of amyl very cautiously, with apparently marked relief and shortening of paroxysm. 3 P.M.—Found by Dr. McCoy, resident physician, suffering from a severe spell. He reports: "Her pulse was 34 in a quarter of a

minute. Five gtt. of the nitrite were placed upon a handkerchief and held over her nostrils. In second quarter of a minute pulse rose to 40; third quarter, 39, and Dr. Bullard, of Brooklyn, who was present, said 'weaker.' In a minute she appeared easy, reclining on a pillow (during paroxysm she always sat up bent forward), and soon after she said her pain was gone."

3d.—Had a very severe spell, during which she was seen by Dr. Murray (resident physician), who reports: "Found her suffering great agony; gave by inhalation 5 gtt. of the nitrite of amyl; pulse 37 in the quarter of a minute preceding inhalation; none for the three quarters after giving the medicine; she appeared easy in half a minute; could not answer questions as to how she was for a minute after; heart agony instantly stopped."

6th. Had a paroxysm during my visit; pulse 110; 5 gtt. of the nitrite on a handkerchief held at a little distance from her nostrils; 1 minute, says she is somewhat relieved; pulse 110; 2 minutes, 5 gtt. more put on handkerchief and held close to nose; 3 minutes, says she is completely relieved.

15th. Has had several spells since last entry, all of them at once controlled by the nitrite. They have been gradually occurring at longer intervals, and have now apparently ceased.

20th. Had no more spells.

In regard to the method of administration, I am not aware that the nitrite has been given otherwise than by inhalation. Its totally insoluble and highly volatile nature renders it unfit for exhibition either in solution or mixture; but I do not see why it could not be given dropped upon a piece of sugar. In cases of tetanus it seems plausible that the remedy would be more efficient if given by the stomach in frequent small doses. When it is to be inhaled, five drops should be placed upon a handkerchief and held close to the nostrils, the pulse being closely watched and taken as a guide for the continuance or withdrawal of the drug. If necessary the dose should be repeated. When giving it by the stomach I do not think it would be safe to start with more than two drops until the effects of the medicine so administered have been more studied than at present. Nitrite of amyl is without doubt a powerful agent in its action on the economy, and yet my experience with it on animals would seem to show that with proper care and a due understanding of its physiological action it is a safe remedy. By this is meant that it does not act unexpectedly and out of proportion to the dose. I have never seen indications of anything such as constantly happens in the use of chloroform upon dogs, sudden arrest of the heart's action, unexpected death, the mysterious production of symptoms apparently out of proportion to the amount given. On the other hand, I have frequently been astonished at the ease with which very serious symptoms have been shaken off, the animal reacting rapidly from a condition on the very border lines of death.—*American Journal of Med. Scien.*, October, 1871.

## NITRITE OF AMYL IN THE COLLAPSE AND CRAMPS OF CHOLERA, AND IN ASTHMA.

DR. TALFORD JONES has a paper in the *British Medical Journal* of Sept. 30 on this subject, in which he advances and supports the following propositions:—

1. That the collapse of cholera is due to impediments to the circulation of blood through the lungs, and that this impediment is due to the contraction of the muscular fibres of the pulmonary artery.
2. That the cramps of cholera are due to a like spasm or contraction of voluntary and involuntary muscular fibre in other parts of the body.
3. That nitrite of amyl has the power of producing relaxation of muscular spasm and arterial dilatation.
4. That in many cases there is a considerable resemblance between cholera collapse and asthmatic collapse.
5. That nitrite of amyl is a remedy giving instant relief in asthmatic collapse.

Of this paper we condense only the proof of the last proposition.

Dr. Jones was called, October 23, to a young married woman suffering from asthma, and found her sitting on the bed, holding to the bed-post. Her surface was of a dusky leaden hue, bedewed with sweat, and cold, especially the feet and hands, which were icy. Her pulse could hardly be felt, and she was making the most violent efforts to breathe. She could not speak, only making a few faint gasps.

Five drops of the nitrite were applied to her nostrils on a piece of lint. In a minute her face was deeply flushed, her heart palpitating, carotids beating, surface warm, respiration easy, and she was able to converse. A return of the asthma the next night was instantly cut short by a respiration of the amyl.

## STRANGULATED HERNIA—PUNCTURE OF INTESTINES —CURE.

BY DR. DIEULAFOY.

THERE was lately reported in the *Gazette Hebdomadaire* a case in which Prof. Delpeau made subcutaneous pneumatic puncture into the intestine of a strangulated hernia in a far advanced case of heart disease. The immediate object was obtained, but the man died shortly afterwards from the heart trouble, and the tunic of the intestine was found to be entire.

M. Nélaton has condemned the puncture of the intestines in strangu-

lated hernia, saying that if it were large enough to allow anything to escape, fluid would, after reduction, escape into the abdominal cavity. But with the aspirateur this danger is avoided. The doctor reports the following case as successful:—

M. G., æt. 82, suffering from hernia, the result of the severe cough produced by pulmonary catarrh. The 30th of July the tumor became irreducible. Repeated efforts at reduction, both with and without chloroform, were made until August 3, on the morning of which day the patient complained of severe pain, radiating from inguinal canal, all over the abdomen, which was slightly tympanitic and tender. There was also dry tongue, constant thirst, incessant but not fecal vomiting, absolute constipation. Pulse 86; feeble, intermittent. The forces of the system were a good deal exhausted, and the extremities cold. The tumor, the size of an egg, was at the bottom of the scrotum, very hard, evidently containing gas and liquid. The skin was of natural color over it. The diagnosis was considered certain that there was an enterocele. After vain efforts at reduction an aspirateur of 45 grammes contents, modelled by Charrière, was used. The needle No. 2 was introduced into the most prominent part of the tumor, and a primary aspiration practised, which drew out nothing but gas. The needle having been left in place, the syringe was reattached, and about a tablespoonful of brown liquid fecal matter was drawn out. A third aspiration yielded about the same amount of the latter. Reduction was now easy. After its performance a free dose of opium was administered. The relief was immediate; no bad symptoms followed, and the same evening the patient had a free spontaneous passage from his bowels.

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### ABDOMINAL PUNCTURE IN TYMPANITES.

MR. JOHN MCBRIDE, Lecturer on Veterinary Medicine and Surgery in the Royal Agricultural College, Cirencester, in the *British Medical Journal* of Nov. 4, 1871, states that it is a mistake that the intestines of the ox are customarily opened by veterinary surgeons for the relief of tympanites. It is the rumen or first stomach only which is ever opened. Puncture of the colon has been tried in the horse, but without success, peritonitis generally following. In the same number of the journal Dr. Braxton Hicks gives a reference (*Obstetrical Transactions*, 1869) to four cases of puncture of the intestines in the human subject, performed by himself.

Dr. G. D. Brown also details the case of a boy, aged 3 years, supposed to be sinking rapidly, and in great pain from tympanitic distention,

believed to be dependent upon tubercular peritonitis. A small trocar was inserted, and a good deal of fetid air with a drop or two of pus escaped. This giving relief, the operation was repeated in a few days, when a reaccumulation had taken place. To the surprise of all, the child recovered, and remained well for sixteen months, at the end of which time he died of whooping-cough and bronchitis.

Dr. Piorry read a paper before the French Academy, Nov. 14, in which he arrived at the conclusion that puncture of the intestines for the relief of tympany was a very dangerous procedure, only to be practised when the distention threatened death and other measures had failed.—*Revue de Thérap. Medico-Chirurg.*, Dec. 1, 1871.

### TREATMENT OF INTESTINAL OCCLUSION BY FORCED INJECTION.

THIS powerful means of treatment, says M. J. Roux, has a variable action, according to the seat, age, and the nature of the occlusion. It offers a chance of success, especially when the occlusion is due to a mass of hard matters or to a lesion of the large intestine, this lesion not consisting either in organic stricture or strangulated hernia. The invagination, the torsion, and especially the Siliac, and certain hernias recently strangled or obstructed, are victoriously combated. In case of failure the injection, if well done, does not increase the danger. The procedure consists in the injection by the rectum of a great quantity (many litres) of cold water. The injection must be made slowly and gradually, so as not to tear the coats of the intestine in case of softening. The water acts mechanically by its mass, and as a stimulant to the intestine by its temperature.

Dr. Isuard gave to M. J. Roux the following outlines of a case:—

A female, 19 years of age, was seized with metropéritonitis, with symptoms of intestinal obstruction, twenty days after a natural delivery, followed by intense constipation. Purgatives having been used without relieving the patient, 5 to 6 litres of cold water were thrown into the intestine in a steady current, with perfect relief to all the serious symptoms.—*Marseilles Medical*.

### ON THE ACTION OF PURGATIVES, ESPECIALLY SULPHATE OF MAGNESIA.

DR. ARMAND MOREAU read at the Séance of the French Academy of Sept. 12, 1871, a note with the above title. I described, he said,



in the Séance of July 5, 1870, some experiments which illustrated very nicely the action of purgatives upon the intestine. I made this publication in reply to a theory formulated in Germany (Bois-Reymond's Archives, April, 1870). I now again discuss the theory, with new experiments. One point which it is important to fix in the beginning is, that the experiments do not contradict one another. The German authors whom I cited in my first communication believe that the purgatives do not act by producing new secretion, but by increasing the peristaltic action and sweeping out of the intestines the liquids already therein.

I obtained a considerable quantity of liquid in a fold of the intestine by placing there some cubic centimetres of a  $6\frac{1}{2}$  per cent. solution of sulphate of magnesia, and obtained the same positive results in acting according to the method prescribed by the German authorities, as well as in varying these conditions. Thus, a fold of the intestine isolated according to their manner furnished an abundant quantity of liquid, if I put the purgative solution in the same day as the operation, or had done the latter some days previously. These are positive results; the following negative. A fold of the intestine which had received the ordinary purgative solution did not distinctly react if this solution did not remain a sufficient length of time. Thus, the solution put in the intestine having been withdrawn after remaining only ten minutes, the fold was found empty many hours afterwards. Likewise, if I had acted on the intestine, isolating a fold precisely in the German method, I found that many days after the operation, the dog being well cured, the fold was only obliterated in appearance; the injected solution passed directly into the peritonæum without causing any trouble. This is still a negative result which I obtained under those conditions. I have taken care, in order to have a contrary result, to place a ligature at both ends of the fold.

Lastly, it would appear as though an isolated fold of the intestine is in an abnormal condition, and would not act like a normal fold. The fold of intestine having undergone atrophy would necessitate a negative solution.

In resuming, the experiments do not contradict one another; they are only different when important conditions are different, and the theories of the German authors are false, because unwittingly they had suppressed some of the essential conditions of the problem.

*Experiment.*—I operated on a dog, August 29, 1871, according to the method of MM. Thiry and S. Radjijewski. The dog, in a good state of health, is 8 days afterward anaesthetized; the wound reopened; a ligature is placed at each extremity of the fold, into which 20 c.c. of a  $6\frac{1}{2}$  per cent. solution of sulphate of magnesia is injected; 24 hours afterwards the fold contained 198 c.c. of liquid.

On the 23d of August I operated on a dog in the same manner; 17 days afterwards 20 c.c. of the purgative solution were injected into the intestinal fold; 16 hours after, the fold contained 180 c.c. of liquid.

The following experiments were especially made to investigate the negative results:—

May 18, 1810, I exposed in a dog a portion of intestine, upon which I placed a tight ligature, and below it a temporary one, and, elevating the fold, injected 20 c.c. of ordinary purgative solution. The solution remained in contact with the mucous membrane for 10 minutes, and I then allowed it to run into the lower bowel, then tightened the lower ligature; 19 hours afterwards the animal was examined; it had been purged, but the fold of the intestine was empty.—*Gazette Médicale*.

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#### ON THE PHYSIOLOGICAL ACTION\* OF CRYSTALLIZED ACONITINE.

At a meeting of the Parisian Academy of Sciences, M. Cl. Bernard presented the results of some experiments made by MM. Gréhaut and Duquesnel upon the action of crystalline aconitine. These observers injected under the skin of a frog one-twentieth of a milligramme.

In thirty minutes the sciatic nerve of the animal had totally lost its motricity, so that when an induced current was passed through it no contraction of the muscles was produced. On opening the thorax the heart was found to be beating regularly.

Two hind legs of a frog were so prepared that in one the hanging nerve could be dipped in a solution of aconitine (one-fifth millig. to cubic centim.), in the other the muscle could be placed in the solution, the nerve being left free. After a time it was found that an induced current through the nerve of the former failed to excite muscular contractility, whilst in the latter it did so—showing that conducting power of the nerve is destroyed by aconitine, and the contractile power of the muscle itself is not affected. Again, the circulation being arrested in the hind legs of a frog, the latter is poisoned. All the nerves soon lose their excitability, except the nerve in the leg whose circulation has been stopped.

It is very evident that sensibility is preserved so long as the condition of the motor nerves allows reflex action. These experiments are believed to show that crystalline aconitine acts like curara in destroying the conducting power of the nerves. In another experiment it was found that after a very large dose (one milligramme) a frog preserved for a very long time the excitability of its motor nerves, and

\* For Chemistry, see *Materia Medica*.

executed both spontaneous and convulsive movements. On opening the thorax the motion of the ventricles was found to be completely arrested. The explanation immediately suggested itself that the large dose had arrested the heart's action, and stopped the circulation, and therefore had not been carried to the extremities. This supposition was confirmed by placing a frog so that the interdigital circulation could be watched with the microscope, and then injecting a milligramme of the alkaloid. In a minute the circulation had become very feeble; in three minutes it had ceased altogether. The motricity of the bronchial plexus was then found to have suffered very much; that of the sciatic nerves to be nearly untouched.

In mammals it was found that crystalline aconitine does not affect the muscle, but does the conducting power of the nerves.—*L'Union Pharmaceutique*, August, 1871.

## ON THE HÆMOSTATIC PROPERTIES OF ALNUS INCANA.

IN the *Canada Lancet* for October, 1871, is a paper with the above title by Dr. T. R. Dupuis. After giving a botanical description of the plant he says:—

The taste of the bark is sweetish, inclining to bitter; has a rough feeling in the mouth when chewed, possesses some astringency, and affects the fauces with a slightly acrid sensation. It imparts a reddish color to the saliva, and both the recent bark and the stick from which it has been peeled very soon acquire a red color by exposure to the air.

I am not aware that any thorough chemical examination of the constituents of this bark has been made. It contains both tannic and gallic acids, the latter probably in greater abundance, besides volatile oil, fixed oil, resin, coloring matter, and other constituents peculiar to the plant. The precipitates thrown down by the ferric salts from the infusion, decoction, alcoholic and ethereal tinctures, have a *greenish* black color, similar to those from tea, sumach, catechu, and some other vegetables.

Very little seems to be known of its medical properties. It is, doubtless, astringent, somewhat stimulating to the stomach, and perhaps tonic; but its *hæmostatic* property is to me its most characteristic one, and that with which I am best acquainted. I have prescribed the bark both externally and internally, and have never observed any ill effects follow its use, except occasionally nausea and vomiting when drunk too freely.

My attention was first called to the *hæmostatic* properties of this sub-

stance when I was a lad, by seeing it used in this way among horse-farriers and in domestic practice. The following cases, in which it appears to have been used with advantage, I have noted from among several others which have occurred during a practice of twelve years. I have also prescribed it in hæmoptysis and in menorrhagia with benefit; and I consider it well adapted to any internal or external passive hemorrhages in which astringents are generally esteemed beneficial; for beyond its merely astringent action, I conceive that it has a power over bleeding vessels possessed by few other substances, either vegetable or mineral. And, though its action on the various organs differs from such medicines as matico, gallic acid, oak bark, uva ursi, etc., it may, without doubt, be prescribed with equal or greater advantage in many cases where these are used.

Dr. Dupuis then describes some cases in which he used the remedy externally.

Case II. was in a boy aged 13, suffering from profuse epistaxis, which had lasted thirty hours in spite of vigorous treatment. The notes are:—

He was then so much exhausted as to be in a state of almost constant syncope, and was considered hopeless. I wanted to try the alder bark before attempting to plug the posterior nares; so I immediately prepared a decoction, and soaking pledgets of cotton wool in it, pushed them as far back into the nostrils as possible, and then kept them wet with it by tilting back the head and pouring the liquid into his nostrils with a teaspoon from time to time. In a surprisingly short time hemorrhage ceased; there were no symptoms of a return.

## FACTS RELATIVE TO PHYSIOLOGICAL ACTION OF BELLADONNA AND OPIUM.

UNDER the above caption M. Colton, pharmacien à Lyon, publishes a paper (*L'Union Pharmaceutique*, August, 1871) in which he states the results of his experiments are opposed to the idea of there being an antagonism in these drugs. His experiments were made by plunging frogs, as near alike as possible in all respects, into distilled water containing in variable quantities the extracts of opium or of belladonna, or a mixture of the two. The following table exhibits the results:—

Aqueous extract of opium.	oz. 5	{ The frog became somnolent, and died at the end of—	48 hrs.	{ In slight convulsions.
	oz. 10	{ The frog became somnolent, and died at the end of—	37 hrs.	{ Without convulsions to the moment when I put it in ordinary water.
	oz. 10	{ The frog became somnolent. At about 48 hours I put him back into ordinary water. He swam with difficulty at first, but in 36 hours had recovered entirely.		
	oz. 20	{ Is less sleepy than in previous case; died at the end of—	12 hrs.	{ In convulsions more strong than the first.

Aqueous extract of opium, aqueous extract of bella- donna, aa.	{	oz. 5 {	Appeared at first not to be influ- enced, but died at the end of—	35 hrs. {	In violent convulsions.		
		oz. 10 {					
		{	oz. 10 {	Remained torpid from the begin- ning, then recovered his vigor, and died at the end of—	24 hrs. {	In violent convulsions.	
			oz. 10 {				
Aqueous extract of belladonna.	{	oz. 10 {	Remained torpid from the begin- ning, then recovered his vigor, and died at the end of—	18 hrs. {	In violent convulsions.		
		oz. 10 {					
		{	oz. 5 {	Did not appear to be influenced, or to lose his vigor in 3 days. When he was put in fresh water seemingly as usual.			
			oz. 10 {	Remained some time somnolent, then seemed to recover some. At end of 48 hours he was put in water, and after 2 hours had regained his usual appearance.			
oz. 20 {	Remained very torpid, then seemed to awaken. At the end of 48 hours was put in water; he swam in a disorderly manner, but 12 hours afterwards seemed to be in his normal state.						

M. Colton afterwards states that some of his experiments seem to indicate that belladonna and opium, given one after the other, cause mutual elimination and thus simulate counter-poisons.

### THE TREATMENT OF SMALL-POX.

DR. ALEXANDER COLLIE, the resident medical officer at the Homer-ton Fever Hospital, says that treatment in the mild variety of variola is unnecessary, and in the black small-pox useless. In the confluent form, however, treatment is of the greatest importance, and the result of the case will sometimes be determined by it. The room in which the patient is placed should be thoroughly ventilated, the windows being kept open even in winter. If possible, there should be two beds in his room, in order that he may be changed from one to the other. He should be allowed a highly nutritious diet, consisting of milk, beef-tea, eggs beaten up with whiskey, tapioca. Cold water will be found most efficacious in relieving thirst, and the prejudice of the patient's friends should not be allowed to interfere with its administration. Effervescing drinks and lemonade may also be allowed. For heat of skin the patient may be sponged with cold water two or three times daily. If there be much restlessness or sleeplessness, the following, repeated in half an hour if needed, will be found of great service: Tincture of opium, 15 minims; spirit of ether, 15 minims; camphor water, 1 ounce; and if this fails stimulants may be given. For the soreness of throat, oleaginous or mucilaginous drinks may be given, and the following has also been found beneficial: Tincture of iron and glycerine, of

each 39 minims three times a day. If laryngitis occur, a large linseed poultice should be applied round the throat, and the temperature of the room should be raised, and rendered moist by means of steam. All depressing remedies should be avoided, and tracheotomy should be performed whenever there is much interference with the respiration. If the patient becomes delirious, it is of the utmost importance that he should be treated with patience, gentleness, and firmness, and that no measures of restraint should be employed. Nothing has been found absolutely preventive of pitting. Common olive-oil may be used for this purpose in preference to applications which are more or less irritating. If diarrhoea occur, a mixture containing laudanum and sulphuric acid may be given.

In regard to the time when a small-pox patient may be considered free of danger to his neighbors, Dr. Collie says that this cannot be until all the products of disease are removed from his body, and until he presents all the ordinary indications of health, such as a normal temperature, a quiet pulse, a clean tongue, a clear mind, etc.—*Philadelphia Medical Times*.

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#### PITTING IN SMALL-POX.

In regard to the very numerous methods for preventing small-pox pitting, the truth appears to be that none is thoroughly effective and to be relied on, but that anything which excludes thoroughly the light and air will have a certain amount of influence in lessening the chances of severe disfigurements.

Dr. Rendle, in the London *Practitioner* of October, writes as follows:—He says, "I have now two cases convalescent from small-pox, in which I applied cotton wool to protect the face. The disease in each case was of the distinct form. One of the two, a girl, aged fifteen years, had an abundant eruption, which, in the unprotected parts of the body, went through the usual consecutive changes. In both cases the parts covered with the wool are left without a vestige of marks. The mode of application is as follows: On the first appearance of the eruption, patches of skin, about an inch square, were washed over with collodion, and immediately covered over with a thin uniform layer of fine wool; the wool readily adheres if applied before the ether of the collodion evaporates. When the whole of the face, etc., was thus covered, the wool was brushed over with a solution of starch or gum. The starch or gum was occasionally reapplied to the edges of the wool, to prevent any shifting by the movements of the face. This covering was kept on until the dry crust fell off the other parts of the body."

### SOME OF THE ILL EFFECTS OF BROMIDE OF POTASSIUM.

UNDER this heading Mr. T. O. Wood, Medical Superintendent of Dunston Lodge Asylum, publishes a paper, with cases, in the *British Medical Journal* of October 14, 1871, in which, *inter alia*, he says its most dangerous effect is when, after a course of comparatively small doses, which do not seem to be taking any great hold of the system generally, or upon the mental symptoms, to control which it is given, it suddenly, and without apparent cause or warning, displays its cumulative effects, and rapidly reduces the patient to a condition of great bodily prostration, and completely alters the character of the mental symptoms. The physical prostration is at once evident. There is great muscular debility; dimness of sight, with dilated pupils; irregular gait, the patient reeling as though intoxicated; whilst nausea, vomiting, or purging, with abdominal pain of a low aching character, may also be present, the breath having a peculiar disagreeable odor. Its effects upon the mental symptoms are no less marked. The patient, who was excited, glorying in his imaginary powers of body and mind, becomes despondent, sullen, melancholy, and frequently lachrymose, often even despairing.

In a previous number of the same journal are cases reported by Witlow Bovis, L.R.C.P., and Dr. R. W. Foss, bearing out these statements, except in regard to the suddenness of the symptoms.

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### PHYSIOLOGICAL ACTION OF CONIA.

THE Russian *Archiv für Gerichtliche Med.* has published an account of a number of experiments on man and the inferior animals, made by Dr. Verigo, with a view to determine the physiological action of conia. The results are as follows:—

1. Conia acts most strongly upon the spinal cord, affecting especially the motor nerve-fibres.
2. This action is exhibited in frogs by the phenomenon of paralysis, without any trace of convulsion, whatever the dose of the poison. In mammals, on the other hand, the most violent convulsions occur after large (lethal) doses of the poison, whilst after small or non-lethal doses paralysis of the extremities only occurs.
3. The phenomena of paralysis proceed from the spinal cord to the peripheral system of the motor nerves, which, therefore, first become affected after the cord itself.
4. The brain appears to be but little affected by conia.
5. The sensory nerves are scarcely at all affected.
6. Administered in small doses, conia retards respiration, and in large doses may altogether paralyze the respiratory acts, which depend not,

as Kölliker supposed, upon an affection of the peripheral nerves, but upon paralysis of the spinal cord. 7. The convulsions produced in mammals by conia form a tolerably certain indication of the fatal issue of the case in which it has been administered. They constitute a symptom of the poisonous action of the drug, and do not depend upon paralysis of the respiration. 8. The blood does not appear to undergo any alteration, the corpuscles at any rate retaining their capability of absorbing oxygen. 9. Conia exhibits no action upon the heart or upon the pulse. 10. It depresses the temperature of the body, and to a greater extent the more distinctly the paretic symptoms are produced. Its action on the pupil is not constant. 11. The action of conia is more strongly and more rapidly expressed when it is injected directly into the veins, more feebly when it is injected into the stomach, or subcutaneously injected. In the two latter cases the action is identical. 12. Conia has no influence on the quality or the quantity of the urine. 13. When applied externally it only produces slight itching and redness. 14. Post-mortem examination shows no appearances characteristic of poisoning with this drug.—*The Doctor*, Oct. 1, 1871.

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#### IPECACUANHA USED AS AN INJECTION IN DYSENTERY.

IN the India *Medical Gazette* of July 1, Surgeon Chas. M. Jessop, 4th Hussars, states that he has been very successful in the following method of treating dysentery. He gives as an enema ten grains of the powder, with half a drachm of laudanum, in two ounces of arrow-root mucilage three times a day until the symptoms abate. The patient is also kept absolutely at rest in bed, and milk diet and bland drinks only allowed, with sometimes a dose of castor-oil, tincture of rhubarb, or senna, in drachm doses, with a few drops of laudanum first. He rarely applies leeches to the anus, but prefers fomentations of steam or hot water to the stomach and arms, the parts fomented having been insulated with an oleaginous fluid to prevent catching cold. The ipecacuanha is valuable in direct proportion to the lowness of the part affected, and acts very quickly in rectal dysentery. He insists that no patient should be allowed to get up until the stools are natural in color, and the entire disuse of tobacco should be rigidly enforced both in the acute and chronic form of the disease.

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#### THE USE OF COLD ABLUTIONS IN FEVER.

DR. LAMBERT, in the *Jour. de Med. de Bord. et Ann. Univ. de Med.*, arrives at the following conclusions:—



1. They are especially useful in typhoid and the eruptive fevers, and are strongly indicated in malignant cases.

2. They act upon the chief and most constant phenomena of these diseases, and are especially antifebrile, reducing the temperature 1.5° to 3° Cent.

3. They favor the re-establishment of a full, profound, regular respiration.

4. They favor the peripheral circulation by the strong rhythmical contractions of the small vessels, which they produce in a reflex manner.

5. They render more active the secretions.

6. They make the skin supple, moist, and fresh.

7. They favor the outcoming of the eruption.

8. They calm cerebral and other nervous excitement, suppressing headache, coma, delirium, restlessness, and causing sleep.

9. They cause the pulse to fall 8 to 30 beats.

10. Their action persists from two to eight hours, and they ought to be repeated two to four times in the twenty-four hours.

11. They have no influence upon the length of the sickness, but render it milder.

12. They are not disagreeable; are readily applied either as cold baths, or by wrapping the patient in a cold wet sheet.—*Revue de Thérap. Medico-Chirurg.*, Sept. 1, 1871.

### TREATMENT OF CARBUNCLES.

CARBUNCLES are most safely, humanely, and more regularly treated as follows:—

Introduce the canula of a hypodermic syringe into the centre of the tumor, draw out the piston, and with it will come pus, if any be present. The syringe is to be removed from the canula and emptied, the canula left in and the syringe replaced to the canula again, and the piston withdrawn as before, as long as pus follows. When all the pus is out, withdraw the canula and apply on the tumor, externally, with a brush, the following:—

℞ Collodion..... 3 i.  
 Castor-oil.....gtts. xx.  
 Carbolic acid.....grs. v.  
 Tannin.....℥i.

Mix. Several applications are to be made, one after the other, so that a good outer covering is obtained at once. If the patient is weak, give him tr. iron, 20 drops, every four hours; also,

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R Fl. ext. Peruvian bark.....gtts. xx.  
 Spts. ammon., arom.....grs. xx.  
 Infusion gentian.....℥ i.

Mix. Repeat as often as deemed advisable.

This is the only treatment I have found recommendable in such cases. Psoas abscess, pus in the joints, etc., can be so treated, to great advantage and safety to the patient.—*Georgia Medical Companion*, September, 1871.

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### VAPOR OF AMMONIA IN THE TREATMENT OF WHOOPING-COUGH.

MR. JOHN GRANTHAM states (*Brit. Med. Journal*, September 16, 1871) that in cases of whooping-cough in the last stage (that is, after the third week) he has had one ounce of the strongest liquid ammonia put into a gallon of boiling water in an open pan, and the steam kept up by means of half a brick made red-hot throughout and put into the boiling water containing the ammonia, the pan being placed in the centre of a room, into which the patients were brought as the ammoniated steam was passing off. "This method was used in the evening, just before bedtime; and it has been so efficacious," he says, "in abating the spasmodic attack, and after three or four days terminating the malady, that I cannot overestimate the great value of this mode of inhaling the ammonia as a therapeutic agent in tranquillizing the nervous system in whooping-cough.—*Medical News and Library*."

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### INFLUENCE OF TOBACCO IN DISEASES OF NERVE-CENTRES.

IN the *Bulletin de l'Association Franc. cont. l'Abus du Tabac*, M. Tamisier states that out of fifty-nine grave affections of the nerve-centres, observed from 1860 to 1869 among men, forty occurred in smokers. In fifteen cases of hemiplegia, nine abused tobacco, and two used it moderately; four did not smoke. Of eighteen cases of paraplegia, five were great smokers, three moderate smokers, and ten abstained from tobacco. Out of twenty cases of locomotor ataxia, fourteen were great smokers, five moderate, and one abstainer. Tamisier thinks that it is especially, if not wholly to this cause that we must attribute the disease in the majority of cases of hemiplegia and of ataxia he has noticed since 1860. M. Lefevre, of Louvain, thinks it indubitable that excessive smoking causes paralytic mania: because, 1st. Nicotine causes in animals progressive enfeeblement of the muscles of

motion up to paralysis, and congestion of the nerve-centres. 2d. Analogous symptoms have been noticed in numbers of persons who abuse tobacco in smoking or chewing. 3d. It has been found in all countries that there is a constant relation between the consumption of tobacco and the increase of general paralysis.—*The Doctor*, October 1, 1871.

### CHRONIC OPHTHALMIA CURED BY TAKING OUT OF A TOOTH.

BY DR. BLANC.

CHARRIÈRE, of the 98th line regiment, came into the hospital the 3d of July for inflammation of the left eye.

The disease had commenced the previous February, whilst he was a prisoner in Prussia. He was seen numerous times by the doctor charged with attending the prisoners, and followed his advice without success. The 20th of April he was sent to the Hospital of Krekon, where he remained two months without receiving any relief, until he was sent back to France.

When he entered the hospital the note was, July 3d : Ocular and palpebral mucous membranes both very red; the radiating vessels crowding up to the cornea; continuous pain, exacerbated at intervals, and especially at night; photophobia intense; head heavy and painful; tongue coated; appetite poor, pulse small, frequent. Treatment: Tea leeches to the angle of the left jaw, collyrium of sulphate of zinc, diluent tisane one-half a quart.

4th. Marked improvement. Treatment continued without the leeches. 5th and 6th. Still better. 7th. A blister to the nucha.

9th. Last night the worst he has had.

Dr. Blanc, remembering an able article of Dr. Taignot (*Revue de Thérap. Médico-Chir.*, April, 1871), now inquired into the condition of the man's teeth, and finding the first upper molar of the left side very bad, extracted it. After the operation there was rapid and steady amendment of all the symptoms. On the 15th of July the patient was surprised reading a newspaper, and on the 21st was dismissed cured.—*Revue Thérapeut. Chir.*, 1871.

### EPILEPSY IN A GOUTY SUBJECT CURED BY COLCHICUM.

DR. ROUDEL was called to see M. P., a bailiff, by his son, who said his father was dying in an epileptic fit. By the time the doctor ar-

lived the fit had passed, and the man was able to tell him that he had suffered from epilepsy for ten years, and had consulted many noted physicians; but in spite of the most faithful trial of their treatments, the paroxysms were constantly becoming more frequent and severe. The various prescriptions (copies of which had been kept) comprised almost all the recognized anti-epileptic drugs. On questioning it was found that the patient had formerly been a martyr to gout—that a severe gouty attack had immediately preceded the first epileptic paroxysm—since which he had been free from his disorder. He was at once put upon the steady use of colchicum, and after a short time was freed from his epilepsy.—*Revue de Thérapeut. Medico-Chirurg.*

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### LYCOPERDON AS A STYPTIC.

In the *Canada Dental Times*, Mr. C. Brewster writes as follows concerning this fungus:—

“Thirteen years ago I commenced using the lycoperdon in my practice, and in all cases it was attended with great success; so that in course of years I gradually abandoned all other material, officinal and non-officinal, and to-day I regard it, without any exception, the best known remedy wherever it can be applied locally. Its mode of application is very easy, being simply to take a piece of the fungus large enough to fill the cavity left by the extraction of the tooth, and pressing it firmly in, hold it there for a minute. If there is blood still flowing, place another piece on the top of the first, and again hold it firmly there. If this does not yet arrest the hemorrhage, remove all that you have put in the cavity and repeat the operation. Two or three applications will cure the worst case. For any other description of wound, a piece large enough to cover its surface, held firmly on, or, if circumstances will admit of it, bandaged on. For cases where it is necessary to arrest the flow of blood from a leech-bite, a small piece of this material pressed firmly on the spot for a moment will completely arrest the flow.

“I have never tried it, but I think in cases of bleeding at the nose, if the nostrils were cleared as much as possible of the blood, and a good-sized piece of lycoperdon was held beneath them, tightly squeezed between the fingers, the patients being directed to inhale with all their force the fumes that arise from this fungus on pressure, it would have the same effect on the lining membrane as if brought into actual contact with it. The smoke arising from the combustion of lycoperdon is a powerful anaesthetic.”

## HYPODERMIC INJECTION OF MORPHIA INTO A VEIN.

IN the *Northwestern Medical and Surgical Journal*, Dr. N. H. Norris describes the sensations produced by an injection of morphia (amount not stated) into a vein of his arm :—

“Immediately afterwards I experienced a strange sensation in the region of my heart, and a creeping and tingling down my arms and legs. I spoke to the clerk, and told him I felt queer, and asked him to get some water. The suffocation and constriction at my heart and throat increased, and the tingling in my limbs, hands, and feet became unendurable. There was a feeling of swelling and stiffness in my joints and lips, and motion and speech became laborious and painful. I dashed some water on my arms and face, and felt my pulse, which was irregular and hardly perceptible. The clerk remarked my paleness, and asked what the matter was, and knowing what I had done, as well as the danger of injecting a vein, which he surmised was the case, became alarmed and commenced to briskly rub my arms and face, as I sat leaning against the wall. The choking and suffocation continued not longer than two minutes, though to me it seemed much longer, when I broke out with a profuse perspiration—my face became flushed, and my pulse rose to over two hundred. I felt as if I was dying. My mind was clear and I showed no alarm. This condition continued for about two minutes, and was followed by vomiting and *intense* pain in my head. As soon as the vomiting commenced my pulse fell to forty, and I felt better. The vomiting continued about twenty minutes. The tingling in my limbs, and swollen and stiff sensation in my joints and lips lasted for about an hour. My head continued to ache until about nine p. m., when it ceased. For two days there was a feeling of weakness and lassitude.”

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ON RHIGOLINE—AMYL HYDRIDE.

IN the *Medical Times and Gazette* of Sept., 1871, are some lectures on the organic hydrides by Dr. B. W. Richardson, in which he calls attention especially to amyl hydride or rhigoline. He believes it will prove of value as a solvent. Thus iodine may be dissolved in it in the proportion of 20 grs. to the ounce, and the solution affords a most ready means of applying iodine, especially to irregular surfaces, such as old sores, the haloid being left by the evaporation of the liquid evenly distributed over the most uneven surface. The solution may be simply poured on. The solution is also commended as a means of administering iodine by inhalation in throat and chest diseases. For this purpose

the 20-grain solution should be reduced in strength, as its vapors are too irritating to the throat. With a little care 5 grains of the iodine can be inhaled at one sitting.

By repeatedly wetting bibulous paper with the strong solution, and allowing it to dry, it can be so saturated with the iodine as, on exposure to the air, to yield the iodine more or less rapidly. When this process is not sufficiently active to disinfect a ward, the solution may be thrown, by means of an atomizer, into the air, upon the floor, clothes, etc. Dr. Richardson believes that iodine is the most potent disinfectant known.

Dr. Richardson has also tried the amyl hydride, as an anæsthetic, largely on animals, slightly on man. Its action in this respect is a very rapid one, and, he believes, will prove a very safe one. When the inspiration of it is suspended, consciousness returns in from half a minute to a minute and a half. When the inhalation is continued in an animal until death, the latter is very gradual in its approach, and appears to be brought about almost equally through the heart and respiratory system. After death the irritability of the voluntary muscles is preserved for a long time, but the heart is completely dead, failing entirely to react to any stimulus.

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#### ERGOT IN DYSENTERY.

In the *Gazette Hebdomadaire* of October 20th is published a communication to the French Academy from Prof. A. Luton, of Rheims, who states as a new thing, that he has used ergot with remarkable success in a violent and protracted epidemic of typhoid dysentery in that city. He gives the ergot in powder, 3 grammes a day, in divided doses, and has also used ergotine in corresponding doses. In most cases convalescence is established on the third day; in other cases a longer time is required. Under its influence blood soon disappears from the stools, pain and fever disappear, and the whole train of symptoms rapidly ameliorate.

[That this use of ergot should be considered new by the French Academy, and pass unchallenged by the editors of the *Gazette Hebdomadaire*, is rather astonishing, seeing that in 1858 Dr. F. E. Barlan-Fontayral published a work of 220 pages, entitled "*Étude botanique et médicale sur le Seigle Ergoté et de l'application de l'ergotine à la cure de la dysenterie et de la diarrhée chronique*," in which he gives accounts of numerous cases cured by the use of ergot.—EDITOR OF YEAR BOOK.]

### OPHTHALMOSCOPY OF NITRITE OF AMYL, ERGOT, AND NITROUS OXIDE.

IN the West Riding Lunatic Asylum Report, vol. i., p. 187, Dr. Charles Aldridge has a paper in which he discusses the appearances produced in the retinal circulation by the use of nitrite of amyl, ergot, and nitrous oxides. The first of these drugs produced very distinctly enlargement of the retinal arteries and deepening of the capillary tint. The action of the second was not so distinctly made out, but Dr. Aldridge thinks that he has established that it slowly produces contraction of the arterioles. The strongest evidence was the case of an epileptic woman, with marked hyperæmia of the retina and optic disc. She took 3 ii. of the fluid extract without appreciable ophthalmoscopic changes two hours afterwards. She then took 3 ii. three times a day for fourteen days, when, the fits in the meanwhile having very much diminished in frequency, the ophthalmoscope showed marked contraction of the arteries, lowering of the capillary tint of the disc, and a decided reduction of the calibre of the veins. Nitrous oxide has apparently the same action on the capillaries as nitrite of amyl.

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### THE INFLUENCE OF ALCOHOL UPON THE TEMPERATURE OF HEALTHY PERSONS.

IN Virchow's *Archiv für Patholog. Anatomie und Physiol.*, etc., Sept., 1871, is a paper by Prof. C. Binz with the above title; much of this we give below; for many valuable references to authorities, and for the remainder of the text, we must refer our readers to the original paper.

The old idea that spirituous drinks increase the heat of the body has in recent times received many experimental contradictions. Especially from our experimental institute have come a number of publications, plainly showing that in the lower animals a temporary depression of temperature follows doses of alcohol not dangerous to life.

In regard to man the matter is not so settled. Partly the habitual use of the alcohol, partly the high demands made upon the patience and self-control of the person experimented on, make the experimentation on human beings a very difficult one. The clinical experiments of Todd and his followers make it very probable that alcohol has no heating power on the organism.

As a further experimental effort at settling the question is the inaugural dissertation of my student.\* The arrangement of his experi-

\* M. Mainzer: Ueber die Wirkung des Alcohols auf die Temperatur des gesunden Menschen.

ments was such as to eliminate, as far as possible, every source of mistake, and in their performance every care was taken.

Of thirty experiments, which lasted from three to four hours, Dr. Mainzer has made most on himself, only six upon another person. M. is 26 years old, of vigorous constitution, a weight of 75 kilo., and 1.8 metre high, and is accustomed to the moderate habitual use of alcohol.

The experiments were made by M. in the daytime, lying, lightly covered, in bed. The measurements were made in the rectum by means of a maximum thermometer constructed by Dr. Geisler. Every fifteen minutes it was read off.

The inquiry as to the normal temperature curve, for the time during which the experiment was made, preceded the individual experiments. The hours were from 7 to 10 in the morning, 3 to 7 in the afternoon, and 9 to 12 in the evening. The alcohol used was 90 per cent., mixed with two or three times its weight of water. The quantity was 15, 40, 50, 75, and 80 cubic centimetres.

The result was that the temperature of Mr. Mainzer was not perceptibly altered by doses of 15 to 80 c. cm. of 98 per cent. alcohol.

Bouvier has drawn the conclusion that alcohol depresses the temperature in fever cases only when given continuously and in large doses.

Whether this is useful or not is another question. That in this way the object aimed at is reached is shown by the experiments of Manassein and Bouvier upon septicæmic rabbits, and also by the labors of Todd and his followers.

The person upon whom Mr. Mainzer experimented proved somewhat more susceptible to the action of the alcohol than he himself.

In all these observations there was shown a tendency to depression of temperature after the ingestion of the alcohol. In the first experiment it was not very noteworthy, but in the second and third (50 and 80 cm. having been taken respectively) it amounted to  $0.4^{\circ}$  C. and  $0.3^{\circ}$  C., at a time, too, when the temperature normally rises. No poisonous effects at all were produced by the alcohol. The second person experimented on, like Mr. M., was a stout, healthy man, accustomed to the moderate use of alcohol. Before this, Ringer and Rickards (*Lancet*, Aug. 25, 1866) had shown that in such persons alcohol had but little influence on the temperature; and Neumann had noticed that in a rabbit, who had been frequently used for experiments with alcohol, the fall of temperature was produced with more difficulty.



## ALCOHOLIC STUDIES.

BY CURRY BOUVIER.

THE answer to the question as to the influence of alcohol on temperature has been attempted during the last years, especially by Prof. Binz, who has shown that if the spinal cord of animals be cut between the sixth and seventh cervical vertebræ fever results, which can be either prevented, or the temperature much lowered, by alcohol.

If the animal is left alone a post-mortem rise of temperature occurs, which may be prevented by the use of large doses of quinine. The post-mortem rise of temperature in my experiments was:—

0.40° and 1.50° C. in dogs.

0.10° and 0.30° C. in rabbits.

0.30° and 0.40° C. in chickens.

In rabbits and chickens the post-mortem rise of temperature could be produced without previous fever by quick death—as destruction of the medulla or upper portion of the cervical cord.

The post-mortem rise was prevented by alcohol, except in the case of a large dog, in which a comparatively slight rise occurred.

The influence on septicæmic animals was also tested. It was found that animals to whom alcohol was given resisted the fever longer than others which received nothing. This agrees with the observation of Manassein (*Centralbl.*, 1869, 705), that no fever arises in animals narcotized with alcohol when putrilage is injected into them. The temperature in septicæmic fever could be depressed many degrees.

The alcohol also was tried at the sick-bed, and in typhus gave favorable results; towards the malarial poisons it showed itself without influence.—*Centralblatt für die med. Wissenschaft*, Dec. 6, 1871.

## ON THE VALUE OF QUININE AS A PROPHYLACTIC.

DR. J. B. HAMILTON states that during the wet season of 1866 he was in charge of a battery of 135 men, stationed at Jubbulpore, East Indies, and that quartered in the same barracks was a regiment of infantry, numbering 500 men. To the artilleryists he served out 3 gra. of quinine every other morning; the infantry got none.

The result was, he never had more than 4 per cent. sick at one time, whilst of the regiment 300 were on the sick and convalescent list from malarious disease at one time, so that the regiment was temporarily almost destroyed. Afterwards quinine was also served to the regiment, but the men being already saturated with malaria, its prophyl-

lactic powers were not so apparent. As the result of experiment he believes cinchonia to come first in prophylactic power, quinia next, and a long way after this quinoidine.—*Indian Medical Gazette*, Nov. 1, 1871.

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### THE PHYSIOLOGICAL ACTION OF DIGITALIS UPON THE CENTRES CONTROLLING REFLEX ACTION IN FROGS.

BY A. WEIL.

THE author studied the influence of digitalis upon the reflex excitability by Setschenow's method of putting the feet of the frog in an acid solution. He found that after the injection of from 1–2 grms. of infusion of digitalis under the skin there was an enormous depression of the reflex excitability. This depression, however, ceased so soon as the frog was entirely decapitated, or the cord cut high up, when the reflex excitability became normal. This shows that digitalis has an exciting influence upon the centres of control of reflex action in the optic thalamus and corpora quadrigemina. If decapitation precede the injection the digitalis has no influence upon the reflex excitability. In these experiments the heart's action was rendered slower by small doses, arrested by large. Experiments were now made to determine whether the lessening of the amount of blood in the centres was the cause of the diminution of reflex excitability, and it was found that if the heart of a frog was opened, reflex excitability rapidly sank, and was restored by decapitation. The same occurred when the heart was depressed with an alkali.

It was now conjectured that the exciting influence of bleeding and of slowing of the circulation depended upon the stagnating blood losing O and receiving C O<sub>2</sub>. From the relation of the respiratory and other motor centres of the brain to the gases contained in the blood it was probable that the blood poor in O also excites the controlling centre, as Rosenthal had shown to be the case for other centres. This was confirmed by experiments, in which the blood, by separation of the lungs, by keeping a long time in a H. atmosphere, by poisoning by S H, was deprived of oxygen. In all cases the reflex excitability sank, and could be restored by decapitation. The conclusion was that the action of digitalis upon reflex centres was secondary to that on the heart.—*Reich. und Du Bois Archiv*, 1871, and *Centralbl. für die medicin. Wissensch.*, Dec. 23, 1871.

## DIGITALIS.

DR. GOUVRAL has a long paper upon the action of digitalis, extending through numbers 26, 27, 28, 31, 39, 40, 43, 47, 50, 51, 1871, of the *Gazette Médicale*. In number 52, Dec. 30, 1871, he arrives at the following conclusions:—

It follows that digitalis does not act upon a single organ or tissue, but upon all the functions simultaneously, or successively and progressively. If digitaline be exhibited in small successive doses, so as to avoid the symptoms which mark saturation of the system and intolerance, its action appears to be limited to the systems of organic life, upon which it acts by its influence on the sympathetic, of which it is a direct stimulant. The two apparatuses more directly in relation with the sympathetic are those of digestion and circulation, and the functions over which they preside are the first affected, the others secondarily.

The action of the drug in small doses is a quiet, mild one. On digestion it does not exert a very marked influence; still it facilitates defecation and gives some appetite to the patient, as the result, apparently, of its action on the peristaltic action. On the empty uterus it has no decided action, yet in the gravid uterus, or in one recently emptied, it produces intermittent contractions, and in hemorrhage arrests the flow. It produces mydriasis by contraction of the dilator of the pupil.

Its action on the circulation, although mild and not apparent, is really very decided and well-defined.

I have demonstrated in fact that digitalis contracts the arteries and arterioles, diminishing their calibre and opposing an obstacle to the passage of the blood; that it renders the heart's movements more strong, energetic, and regular; that it augments the arterial tension, increasing the fulness and force of the pulse, and moderates the number of the beats in direct proportion to the elevation of arterial pressure.

It results from this action that the course of the blood, when it has been irregular, becomes more regular. As a result of this, respiration becomes more calm and regular, the oxidation more normal, the skin paler and more natural in color, the secretions more abundant, and the urine often very much increased in quantity.

The increase of the secretions, especially of the urine, is a powerful cause of denutrition sufficient to cause absorption of solid and liquid morbid exudations, or even wasting of healthy tissue.

If the small doses are given so rapidly as to accumulate in the system, or if sufficiently large doses or dose be given, the symptoms of

intolerance are induced,—many of them the exaggeration of the preceding, such as intestinal colic, alvine evacuations, nausea, and even vomiting, frequent micturition, more rapid dilatation of the pupils, change in the force and frequency of the pulse,—all indicating that the digitalis acts upon the grand sympathetic; but here another element enters, which changes especially the circulation and those functions immediately subordinate to it; this element is the diminution of the arterial pressure, which the sensitive nerve of the heart, very actively impressed by a strong dose of digitalis, produces by determining a paralysis of the vaso-motor nerves by a reflex action through the cord. The capillaries then relax, and the blood rushes from the large arteries, causing diminution of arterial pressure and acceleration of the beats of the heart. The exuberance of the peripheric circulation causes the respiration to become more active, oxidation more quick, the temperature more elevated, the mucous, cutaneous, salivary, and bilious secretions more free, and, per contra, the urinary secretion less; at the same time the calm caused by the small doses gives way to the restlessness and malaise caused by large doses of digitalis.

Given so as to rapidly produce serious symptoms, or in a single sufficiently large dose, the phenomena just noted become exaggerated, and soon there comes a third period, characterized by paralysis of the nerve centres, paresis of the voluntary muscles, great feebleness of the heart's action, and, at last, death by syncope.

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#### DR. ACKERMANN ON THE ACTION OF DIGITALIS.

According to Prof. Ackermann (*Wien. Med. Woch.*) the action of digitalis on the circulation consists in a falling off of the rapidity of the pulse, after which it becomes more frequent, lastly slower again, even to the extent of arrest of the heart's action. The primary arrest of the frequency is in consequence of irritation of the vagus nerve, with the certainty that this remains absent when the vagi have been previously paralyzed by atropine. The rapidity of the pulse is only partly the consequence of paralysis of the vagi, inasmuch as it is more marked before than it is after the use of atropia. Besides this, marked increase of pressure and lessening of pressure in the aorta is noticeable, which can only partly be accounted for by means of irritation and paralysis of the vaso-motor centres: and with these occurs a rise in the temperature of the blood. The rise of pressure explains the action of digitalis in cases of valvular failure at the left venous orifice, and the rise in temperature, which probably is caused by the greater rapidity of the blood, explains the antiphlogistic action of the remedy.—*The Doctor*, Jan. 1, 1872.

## ON THE INFLUENCE OF BLEEDING.

BY DR. L. NARAIKIN.

Under the aid of Prof. F. Dogiel I have made a series of experiments upon the influence of blood-letting upon the rapidity of the blood current, upon the lateral pressure, and upon the temperature.

A more extended discussion of these experiments can be found in my *Thesis as Dissertation*. In this communication I simply give some of the results.

The influence of bleeding upon the nourishment of the organism was first given by Prof. Berard's pupil and by Panum (*Experimentelle Untersuchungen über die Temperaturveränderungen des Menschen*, Virch. Archiv, 1844, 1845, 1846), and T. Marchi (*Medicinisch-Chemische Untersuchungen über die Veränderungen der Hitzegrade*, 3 Hefen, Berlin, 1863). In 1867, Prof. J. Bernhart (*Veränderung d. Körpertemperatur*, 1867, No. 1) and, especially, J. J. Berge (*Der Einfluss des Blutverlustes auf das Centrum der Nerventhätigkeit*, Verhandlungen Physiolog. Vereins, 1870) have made experiments upon the effect of bleeding upon the heart's beat and the blood pressure. As far as I know, the influence on the lateral pressure has not been investigated.

All my experiments were made upon dogs; and the measure of the central pulse, the rapidity, the central lateral pressure, and the number of the pulsations were measured by Prof. Dogiel's method (*Die Ausmessung des strömenden Blutes*, 1 Hefen aus der physiol. Anstalt zu Leipzig, 1877). The apparatus was generally connected with the carotid, and the bleeding was from a vein or artery in the opposite lower extremity. The results were:—

1. Bleeding sinks the central rapidity in the blood stream in the carotid and femoral artery.

2. An arterial or venous bleeding from the upper extremity has more influence on the rapidity of the blood current than a similar bleeding from the lower legs.

3. The amount of lowering depends upon the amount of blood drawn.

4. The central lateral pressure sinks under the influence of bleeding, although there are cases where it remains unaltered or even rises. This difference depends as well upon the amount as the rapidity of the bleeding.

F. Nawroczky observed in his experiments upon rabbits a distinct ascent of the blood pressure through bleeding, and explained it by cerebral anæmia.

L. Naraiiklin (*Ueber die Wirkung des verm. Blutzufl. zum Gehirn*,

u.s.w., *Centralbl. f. d. Md. Wissensch.*, 1870, No. 31) witnessed a very marked ascent of blood-pressure in the crural artery of a cat, upon pressure on the carotid. He explained this by irritation of the vaso-motor centres, which produced contraction of the capillaries of the body. When I made my experiments upon dogs, I also observed a distinct rising of the lateral pressure during and after free arterial bleeding; still it was not so great as Nawrotzky saw, was of short duration, and always followed by lessened arterial pressure.

5. After the bleeding the alterations of the lateral pressure and the rapidity soon subside into the normal state.

6. With the lowering of pressure and rapidity there is commonly an increase in the number of the pulse.

7. In the course of and after the bleeding, one perceives a lowering of the bodily temperature, which in my experiments amounted to 1° to 2° C.—*Centralblatt für die Med. Wiss.*, Dec. 23, 1871.

**Bleeding—Transfusion.**—In the *American Journal of Medical Science* for Jan., Dr. C. C. Hildreth has a paper of some interest on these subjects; which, however, contains nothing absolutely new, and will hardly bear extracting. He commends bleeding when from acute congestion of lungs or brain there is pronounced danger to life; and in “certain cases” of peritonitis, croup, pneumonia, pleurisy, and acute rheumatism.

In the same number, Dr. J. E. Winants details a case in which a man moribund, about a month after crural amputation, was temporarily resuscitated by the injection of eight ounces of non-defibrinated lamb's blood. He died fifteen days afterwards with symptoms of gastritis.

## TREATMENT OF HYDRARTHROSIS BY ASPIRATION.

DR. DIEULAFOY has recently published a pamphlet on this subject in Paris, in which he reports a number of cases both acute and chronic, traumatic, rheumatismal, and without obvious cause, in which aspiration of the knee-joint was practised with good result. The following are a very few of the cases given:—Double hydrarthrosis of fifteen days' duration, attended with great pain, in a man aged 47. Between the 26th of October and the 29th of November five operations were performed on each knee; the liquid reproducing itself so rapidly that in twenty-four hours 120 grammes of fluid would re-collect in each joint, and the pains, which would at first cease, would reappear with the effusion. The application of ice was found efficacious.

Hydrarthrosis, of six months' duration, of right knee, without obvious

cause, in a conscript. 35 grammes were taken out. The man then walked ten kilometres (about six miles) without suffering. Twelve days afterwards the liquid had reappeared, 40 grammes were evacuated, paintings with tincture of iodine were practised, and no further effusion occurred.

Rheumatic hydrarthrosis of the left knee, of eight days' duration, in a man aged 38. 70 grammes of fluid containing a large number of leucocytes were drawn off. Bandages were applied, and three days afterwards, the effusion having reappeared, 45 grammes of liquid, containing fewer leucocytes, were drawn off. Two days after 30 grammes were evacuated; compression; cure after nine days' treatment.

The operation is performed as follows:—The piston of the aspirateur is drawn partly up, so as to form a vacuum, and the needle connected with it, by means of a short caoutchouc tube, is pushed a little way into the tissue at the designated spot, and the cock of the aspirateur turned. The needle is then slowly pushed into the joint, and when the fine jet spouts into the cylinder, the needle is known to have fairly entered, and motion of it ceases. The aspiration is then continued until no more liquid can be obtained; no pressure is to be made on the joint. A drop of collodion is to be put over the little hole the moment the needle is withdrawn. A simple spiral or number-of-eight bandage is then applied, the limb raised slightly, and quiet enjoined. If in twenty-four hours marked effusion has occurred the operation is repeated, if not, the pressure reapplied. Dr. Dieulafoy claims that the operation is harmless, painless, and diminishes greatly suffering—shortening the time necessary for cure.—*Bulletin Génér. de Therap.*, Jan. 15, 1872.

## ARSENIC IN MENORRHAGIA AND LEUCORRHEA.

BY DR. J. H. AVELING.

WHEN these affections depend upon the presence of polypi, fibroids, cancer, etc., Dr. Aveling thinks that arsenic is of no use; but when hyperemia is the cause of the flow, arsenic, he believes, arrests the latter by curing the former. He says:—Hyperemia of the passive or atonic character is that which is most benefited by the use of arsenic. The uterus, when in this condition, is larger and softer than in its normal state. It is usually tender to the touch, but not always so. To the eye it appears of a deeper red than is natural. After death, the capillaries are found dilated, and the tissues tinged with red. Unlike the color produced by inflammation, however, this redness can be removed by careful washing.

A patient coming to you with her uterus in the state just described, will, in addition to a host of other subjective and objective symptoms, most probably complain of the too frequent recurrence of the catamenial period, of the excessive discharge at that time, and, in the intercatamenial period, of persistent and distressing leucorrhœal flow. Now, in such a case as this, I should commence by administering two drops of the liquor arsenicalis, or one granule (one milligramme) of arsenious acid, three times a day, at meal-times. This dose I should continue for a fortnight. If, at the end of that time, no conjunctival irritation had displayed itself, I should increase the dose to four drops of the solution, or two of the granules; and then again, after another interval, to six, eight, ten, or even more drops or granules in proportion, watching the patient, and being guided by her tolerance of the remedy.

Besides the general effect of arsenic already alluded to, the first result of this treatment will be the lengthening of the intercatamenial period; and it is remarkable how this is sometimes extended, one or two days being only gained at a time. By persisting in the remedy, however, the interval will become greater until it arrives at its normal duration. Occasionally the progress is more rapid, and the proper interval is at once attained. Besides the improvement in this respect, the amount of the discharges will gradually decrease, and in like manner all the other hyperæmic symptoms disappear. I have found it necessary to administer large doses, and cannot remember ever having produced any of the premonitory symptoms of arsenical poisoning beyond that of conjunctival tenderness. I have been obliged, however, to continue the remedy for several months, and have had to recur to its use more than once when the hyperæmic symptoms have reappeared. In some cases an excessive leucorrhœal discharge has the effect of supplanting the catamenial. In these the cure of the former has the result of removing the amenorrhœa—*British Medical*.

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### CHROMIC ACID.

IN the London *Lancet* (Vol. II., p. 847) is a paper on chromic acid by Dr. John Dougall, the more important portions of which we give here in full.

*Antiseptic properties.*—As an antiseptic, disinfectant, and preventive of germ growth, chromic acid stands "second to none." Several varied experiments were made in order to ascertain its antiseptic powers in contrast with those of carbolic acid. One detailed may suffice, all the others confirming it. One ounce of ox muscle was immersed for twenty-four hours in four ounces of an aqueous solution of chromic acid (1-2000), then suspended in air. In two days it was quite black, and



in six days as hard as wood, in which condition it still remains (three months after) without mould or taint. One ounce of ox muscle was immersed for twenty-four hours in four ounces of an aqueous solution of carbolic acid (1-1000), then suspended in air. In six days it was much hardened, brownish-black, speckled with mould, and distinctly tainted.

It appears that chromic acid acts as an antiseptic by coagulating protean compounds, a property which it possesses in the highest degree, and to which I am not aware that attention has been hitherto directed, although used for a considerable time in hardening animal tissues for microscopical examination. The coagulating power of chromic acid in albuminous solutions has been compared with that of most metallic salts, various acids, etc., and found to exceed them all: *e. g.*, it has about ten times the coagulating power of carbolic acid, fifteen times that of nitric acid, twenty times that of bichloride of mercury, and a hundred and fifty times that of chloralum, etc. Shortly after a piece of muscle is immersed in a solution of chromic acid, there forms in considerable quantity a grayish, opaque, granular sediment, coagulated albumen; while the deep red of the muscle is changed to brownish-yellow; ultimately it looks as if it had been boiled, the residual portion of muscle being composed almost exclusively of fibrous stroma, and becoming, on drying, extremely hard and tough. A portion of muscle immersed in a solution of carbolic acid retains a light pinkish, somewhat blanched aspect; while the solution, remaining void of sediment, is reddish and hazy, but translucent. If to a portion of this fluid there be added a little chromic acid solution, not stronger than 1-1000, a voluminous precipitate of albumen is at once obtained, clearly demonstrating the superior coagulating power of chromic acid over that of carbolic acid.

A solution of two grains per ounce at once indicates the presence of albumen in a solution consisting of one part of a saturated solution of beef-juice in twenty of water; while one of beef-juice in thirty of water may be detected by allowing the mixture to stand for twelve hours. Chromic acid is admirably adapted for determining volumetrically the percentage of albumen in a fluid. An albumenometer may be constructed as follows: Fill a wide-mouthed burette to a multiple of 100 with albuminous urine or an albuminous fluid; add solution of chromic acid, about four grains per ounce, in slight excess; shake the mixture; set aside for twenty-four hours; read off the precipitate, and multiply. No heating is required. Chromic acid also coagulates mucus, saliva, chondrin, and gelatine. With the latter two it forms, in excess, canary-yellow fluids and flocculent precipitates colored like chromate of lead. The reaction with gelatine is as delicate as that with tannin, giving a response with 1 to 5,000. Chromic acid is

therefore a test for gelatine. An aqueous solution of carbolic acid (1 to 20) produces only slight haziness in gelatinous solutions.

*Disinfecting properties.*—Chromic acid coagulates, hardens, and oxidizes decomposing organic matter. It combines simultaneously with ammoniacal products and with nascent sulphuretted hydrogen, reducing the latter to water and free sulphur ( $2\text{CrO}_3 \times 3\text{H}_2\text{S} = \text{Cr}_2\text{O}_3 \times 3\text{H}_2\text{O} + 3\text{S}$ ). Added to putrid blood, flesh, pus, urine, or fecal matter, the offensive odor is soon absolutely removed, the mixture remaining fresh for an indefinite time. Dr. R. A. Smith found that bichromate of potassium surpassed thirteen other of the most energetic antiseptics, including carbolic acid, in preventing the evolution of sulphuretted hydrogen in a mixture of equal parts of blood and water.\* This salt has a coagulating power near that of nitric acid; *i. e.* fifteen times weaker than that of chromic acid. Hoppe-Seyler has shown that “while in disinfection it is highly necessary to destroy the products of fermentation and putrefaction, yet the destruction of sulphuretted hydrogen and ammonia can have no more influence on the fermentative changes involved in cholera and typhus than the removal of carbonic acid can have upon the progress of alcoholic fermentation; and therefore the ferment itself must be attacked, which, as pointed out, is more resistant than the living organisms in decomposing solutions.”† Now chromic acid, as already shown, fulfils admirably these requirements. Carbolic acid does not combine with ammonia, nor decompose sulphuretted hydrogen. This is surely of importance in a sanitary sense, when it is remembered that almost to these properties alone are due the marked disinfecting powers of sulphurous acid, nitrous acid, permanganate of potassium, bisulphite of lime, protosulphate of iron, chloride of zinc, chloride of aluminium, chlorine, bromine, iodine, etc. Carbolic acid seems to act as an antiseptic solely by coagulating albumen. It does not preserve by absorbing and retaining moisture, like chloride of sodium, alcohol, etc., as, practically, it has no affinity for water. Chromic acid is the reverse.

In Dr. A. E. Sansom's book, page 28,‡ the following passage occurs:—“It has been shown, however, that carbolic acid has the faculty of coagulating albumen. Is it on account of this faculty that it prevents fermentation and putrefaction? On this point a comparative experiment throws some light. Let a solution of the albumen of egg be precipitated, in one case by heat or by an ordinary chemical reagent, and in the other by a solution of carbolic acid, and let the resultant precipitate be kept a considerable time in contact with the air. It will be observed that whereas in the one case the albumen will become decom-

\* “Disinfectants and Disinfection,” pp. 89, 91. † *The Lancet*, August 26, 1871.

‡ The “Antiseptic System.” By A. E. Sansom, M.D., London.

posed in the ordinary manner, that precipitated by the carbolic acid entirely resists putrefactive change. It is therefore obvious that carbolic acid has an action over and above its action as a mere precipitant of albumen." The fact is here ignored that in general chemical precipitates of albumen are soluble in water, specially carbolico-albuminoid precipitates; and as the latter cannot exist without the presence of carbolic acid, the difference between the "carbolic" and "heat" precipitates is simply that the one contains an antiseptic, while the other does not. As regards the other precipitates, the alleged results only show that carbolic acid is a more powerful antiseptic than any of the ordinary chemical reagents referred to. Furthermore, it may be urged that carbolic acid is volatile, whereas chromic acid is fixed; therefore the former can arrest putrefaction by coagulating floating particles of organic débris. But in a series of experiments by Dr. R. A. Smith,\* "to determine the efficiency of strong gases and volatile substances in preventing putrefaction," it is shown that pieces of fresh meat suspended in bottles containing chlorine, bromine, iodine, hydrochloric acid, ammonia, protoxide of nitrogen, nitrous acid, and sulphurous acid, were fresh at the end of twenty-eight days; while a piece suspended in a bottle containing heavy oil of tar, and a piece in a bottle containing McDougall's powder, of which the chief ingredient is crude carbolic acid, grew slimy and putrid in seven days. I have also made the following experiment:—A piece of ox muscle, a portion of beef-juice, of urine, and of infusion of hay, the three latter in separate phials, were suspended in a gallon bottle, which contained fully a pound of pure carbolic acid, about six inches from its surface. The bottle was kept open at about 60° F. On the fourth day the beef-juice was putrid and swarming with bacteria, vibriones, etc. A portion of the same juice exposed to the air was not more putrid on the fourth day than that in the bottle. On the fifth day both the urine and infusion of hay teemed with life; while on the surface of the latter there was an abundant development of penicillium. On the sixth day the piece of muscle was putrid and slimy. These facts prove that the vapor of carbolic acid, even when most concentrated, fails to arrest putrefaction, and to prevent the appearance of germs; indeed, as seen with the beef-juice, it does not even delay those phenomena, the portion suspended in the carbolized atmosphere putrefying as quickly as that kept in ordinary air. "Here is a beautiful hypothesis slain by an ugly fact." After these results it is impossible to conceive, as it would be absurd to expect, the infinitely minute quantity of carbolic vapor which can be tolerated in the wards of a hospital, or is capable of diffusing spontaneously in an alleged infected medium, competent to destroy floating

\* "Disinfectants and Disinfection," p. 109.

unseen germs and organic particles, seeing that in the highest state of concentration, and all the conditions in its favor, it failed to affect visible germs and tangible organic particles.\*

*Power in preventing animalcules.*—As a preventive of germ life, chromic acid surpasses sixty-six other chemical bodies, consisting of irritant, narcotic, and narcotico-irritant poisons, including all the known antiseptics and disinfectants, except two or three substances, with which it has not yet been compared. In this respect it greatly excels carbolic acid, the average preventive strength of which, in three aqueous solutions of hay, urine, beef-juice, and egg albumen, is only 1 to 400, while that of chromic acid is 1 to 3,300.†

*Effects on animals.*—The results of various experiments on rabbits, etc., show that chromic acid, in concentrated solutions, is a pure and powerful corrosive of animal textures, effecting speedy and complete local disorganization. So actively does it destroy the vascular tunics, gelatinizing their fluid contents, that absorption is rendered impossible; these, by the merest contact with the acid, being converted into consolidated emboli, which choke the capillary passages and preclude further ingress. This view is confirmed by, or may be inferred from, the fact of the poison not being found in the blood or urine. If equal portions of muscular tissue and chromic acid be left in contact for about one hour, the whole is converted into a mass like burnt sugar, which is freely soluble in water, rendering it yellowish-brown.

*Chrome sores.*—Through the kindness of Messrs. White, of Shawfield, near Rutherglen, the largest makers of bichromate of potassium in this country, I had an opportunity lately of examining some of the "chrome sores" on the bodies of several workmen. These occur chiefly on the hands and exposed parts, and are said to arise from the salt coming in contact with a denuded cuticular surface. The first symptom is pain, succeeded by redness; and latterly the affected part assumes a papular or furunculoid form. After the lapse of some days, a cylindrical slough or core exudes from the centre of the swelling, leaving a deep pit with nearly vertical walls, the bottom of which generally extends through the cutis vera, and not unfrequently into or through some of the muscles. The sores are long of healing, doubtless from loss of structure, the salt acting like its acid, though with less intensity.

Chromic acid in this form has been said to have a strong propensity for the destruction of cartilage, inasmuch as the nasal alæ and septum,

\* See also, "On the Relative Powers of various Substances in the Destruction of Microscopic Organisms," in the *Lancet* of August 6, 1870.

† "On the Relative Powers of Various Substances in Preventing Animalcules." Churchilla.

and even the larynx, of workmen employed in the manufacture of bichrome are frequently greatly corroded by it. The ulceration has been considered similar to that of tertiary syphilis, and bichloride of mercury recommended as an antidote, and withal, this absurdity has been promulgated in a standard work on chemistry.\* From experiments made with the acid on portions of the trachea of a cow, the reverse is proved to be the case. Indeed, chromic acid might rather be said to have a specific action on gelatine or muscle, because breaches of surface are here the rule, whereas ulceration of cartilage is the exception. The cause of the nasal and laryngeal affection is clearly the same as that of the other sores—a cuticular hiatus; and, while there seems an additional reason why the nasal walls should be attacked more than other parts, still that is fully counterbalanced by the material of which they are composed, resisting the action of the acid more; hence it is seldom affected.

During respiration in an atmosphere contaminated with floating particles of the chromic salt these are constantly brought in contact with the anterior nares, etc.; and, dissolving in the nasal secretion, set up irritation, which, if prolonged, results in abrasion of the mucous membrane. What follows is plain: each inspiration deposits a variable quantity of the salt upon the affected part, resulting in ulceration.

*As a test for strychnia.*—Chromic acid elicits the colored reaction in a solution containing  $\frac{1}{100000}$  of strychnia. The *modus operandi* is to put two or three minims of the strychnia fluid on a white non-porous surface, then add a few needles of chromic acid, which instantly dissolve, imparting to the liquid their characteristic tint. One or two drops of *concentrated sulphuric acid* are now added, and the play of color is at once evolved. With stronger solutions the result is very distinct, and in any case unfailing. In applying this test the above method must be strictly adhered to; because if sulphuric acid be added to the strychnia solution before the chromic acid, the latter will not dissolve, and the result is negative. Chromic acid does not give the colored reaction with dilute sulphuric acid.

Dr. Dougall then speaks of the uncertainty of the test when bichromate of potash is substituted for chromic acid, and concludes his paper as follows:—

“In the absence of such knowledge, it seems to me that it might be used with a fair prospect of success in the following cases, for some of which it is already recommended in works on *materia medica*:—As a hæmostatic; as a caustic to cancerous tissue, chancres, condylomata, hospital gangrene, phagedenic ulcers, bites of rabid animals, poisoned

\* In Meadow's “Prescribers' Companion” (page 152) potassæ bichromas is said to have been recommended as an antisyphilitic.

wounds, warts, hæmorrhoids, etc. ; as a wash to allay fetid discharges ; as a gargle in diphtheria ; as an injection in ozæna, uterine catarrh, leucorrhœa and gonorrhœa ; to disinfect cholera and fever stools, for which it is admirably adapted ; as a preventive of suppuration, putrefaction, etc. In every case it must be used dissolved in water ; and, except where a strong caustic effect is desired, in medical or surgical cases, the solution should not be stronger than half a grain to the ounce, and be succeeded immediately after gargling or injection by the application of pure water. I have used chromic acid to a limited extent in the five latter affections above specified with a fair measure of success ; in gonorrhœa and ozæna the results are especially gratifying. Finally, I have no doubt that its remarkably antiseptic, disinfectant, and coagulating powers will suggest many applications in medicine, surgery, and hygiene not above enumerated."

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#### DISINFECTING POWER OF CARBOLIC ACID.

THE disinfecting power of carbolic acid seems yet to be dubious, and certainly not so great as to be relied upon. Dr. H. J. von Ankum inserted a paper in *Morandschrift voor Natuurwetenschappen* stating the following facts:—

Atmospheric air, to which are added the vapors emanating from carbolic acid, is unable to hinder the development of lower organisms in water with hay, in milk, and in urine. He put those substances under a glass bell, with an opening at the upper side, and surrounded by little cups filled with carbolic acid. All was placed in a ventilating closet, and the arrangement was such that the air that passed the above-named substances was mixed, if not saturated, with the vapors of carbolic acid. After the lapse of a little time, the development of lower organisms took place just as if the fluids had been exposed to the free air. Von Ankum made use of pure and impure carbolic acid, and only once he saw, in using the impure strong-smelling carbolic acid, that the formation of those organisms was retarded, and did not take place in so many forms. He concludes, from his experiments, that no disinfecting action can be expected from the vapors of carbolic acid when they are mixed with the atmospheric air in such quantity that the respirations can take place in it without damage.—*Med. Times and Gaz.*, Dec. 16, 1871.

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#### DISINFECTANTS.

FOREMOST in interest, if not particularly novel, are the views expressed by M. Jeannel, of the Military School at Metz.

He speaks first of all of those agents which destroy fetid gases and miasms—burning them up with oxygen. These are, oxygen itself, the atmosphere, ozone, the permanganates, and nitric acid. The first three are the natural disinfectants, but they act slowly, and must be continually renewed, which is the philosophy of ventilation. The permanganate acts by offering to oxidizable matter its large quantities of oxygen, and thereby burning them at a low temperature. It is therefore, he says, a very energetic disinfectant.

The strong suffocating and disagreeable odor of nitrous acid restricts its use, but it may be depended on for certain purposes. Its action is analogous to that of permanganate.

The second class of disinfectants described by M. Jeannel takes in those substances which act by combining with the hydrogen of organic bodies. The chief of these are chlorine and those of its compounds that have been employed as disinfectants. Iodine and bromine are classed with chlorine, but Jeannel thinks that much of their action is to be traced to their caustic properties. They are very useful as surgical appliances in fistula, etc.

A report of an interesting meeting of the Royal Pharmaceutical Society of Brussels, at which the subject of the disinfecting property of certain supposed disinfecting and antiseptic substances were discussed, has appeared in the *Presse Méd. Belge*. M. Créteur has made many experiments, and he shows that nothing is comparable in effect to a mixture of sulphate of iron and chloride of lime in its action on organic putrefactive matter. He shows, by a double series of experiments on blood, the injurious action of fetid gases in the blood. Nothing is easier than to prevent animal decomposition by causing them to undergo the action of oxygen. He showed a piece of veal preserved in water for three weeks by this method.

From these experiments the author concludes that all substances capable of assimilating hydrogen products, or causing a formation of oxygen, ought to be considered as disinfectants.

M. Gille has published, in the *Archives Médicales Belges*, an interesting article "On the Value of a Disinfectant," in which he says we must not only get rid of offensive smells, but of all other products of decomposition, and that any substance which only effects one of these ends is a very imperfect disinfectant. He then passes in review some of the disinfectants in common use. Sulphate of iron he considers is useful from its effect of decomposing ammonia, carbonate, and sulphohydrate. Perchloride of iron, besides this, precipitates albuminoid matter, and acts also by its chlorine. Lime disinfects organic matters, fixing carbonic acid and sulphuretted hydrogen, and decomposing hydrosulphate of ammonia. The permanganate of potass

is a most energetic oxidizing agent, decomposing sulphuretted hydrogen, destroying organic matter, and acting upon all fixed compounds with which it comes in contact.

It may be remembered that M. Decaisne employed it in dissecting-rooms, but that M. Gosselin in 1864 reported that it was not adapted for this purpose. Chlorate of potass may be used to disengage chlorine in places that are not easy to reach by other means. This is a capital plan for cesspools and middens.

Chloride of lime acts by the chlorine it sets free, and chemically decomposes most foul gases. M. Decaisne considers it the best disinfectant of offensive gases. Does it also, mixed with metallic oxides, act by disengaging oxygen, as has been asserted? M. Gille doubts this. He also observes, that although chloride of lime destroys offensive gases, it does not arrest putrefaction, but, by the lime set free, hastens the process.

Hydrochloric acid is employed to disinfect dog-kennels. Vessels containing it, left open, completely destroy the offensive gases that abound where a large number of dogs are kept. This plan is adopted in the Veterinary School of Brussels.

The action of carbolic acid, M. Gille says, is not chemical. He accepts what is commonly called the germ theory, inasmuch as he says the acid prevents germs from provoking putrefaction. He also thinks it will hinder the formation of miasms, and is, therefore, a good preventive of epidemics. It is thus to be seen that all the disinfectants are good, but that they should be used with discernment, a selection being made according to the products we wish to get rid of.

In a discussion that took place at an earlier date in Paris, M. Dumas said the acid had been employed since 1866, by the *pompes funèbres*. It was also observed that this substance was first used as a preventive of cholera at Marseilles.

Dr. Henry, in the last century, determined the degrees of heat necessary for destroying infection by experimenting on infected clothing, which he afterwards got people to wear. Since then disinfecting ovens have generally been made to produce the heat indicated by that practical physician.

Dr. Grace Calvert now asserts that a less degree of heat than 400° Fahr. is useless, because bacteria will resist heat up to that degree.

M. Lemaire, it will be remembered, by not brushing his teeth for a week, allowed them to swarm with bacteria, but he, nevertheless, remained in perfect health, so that bacteria and disease-germs can hardly be considered synonymous terms, as some writers seem to fancy.—*The Doctor*.



### ON THE TREATMENT OF HYPERPYREXIA BY WITHDRAWAL OF HEAT.

Dr. T. CURRIER ARMSTRONG has a paper on this subject in the *London Lancet* of Dec. 28, in which he contends that the withdrawal of heat should be as slow as possible—that the bath at the entrance should have a temperature of 90°, and the time of immersion in it be correspondingly long, the water being slowly cooled during this period. Thus a patient may remain one, or even two hours in the water, and the temperature of the latter be slowly reduced from 90° to 50°. He thinks after such bathing the reduction of temperature will be more permanent, and should be made still more so by the administration of five to twenty grains of quinine. During the bath the patient must be watched as closely as the steam-gauge of a rotten boiler, and any tendency to shivering, syncope, or other untoward symptoms be the signal for his immediate removal. He states that he had seen eleven cases of cerebral rheumatism with but a single recovery, and in that case the symptoms never were violent, before last September, when a very violent case was saved, apparently, solely by the abstraction of heat by means of bottles of ice applied to his body, and ice applied freely to his head, and allowed to drip over his shoulders. He details this case, and thinks the partial application of the intense cold about equal to the general application of mild cold, advocated earlier in the paper.

**The Cooling Pad.**—Dr. Wm. Roberts commends, as a means of cooling, a pad consisting of a close flat coil of very thin India-rubber tubing,  $\frac{1}{2}$  of an inch bore, cemented to a coarse canvas backing. The terminal portions of the coil are made of large tubing, and reaching a couple of feet beyond the pad, are furnished with stop-cocks near the end. The inner end of the coil escapes by piercing the centre of the canvas. These pads are placed under the patient, the coil being previously filled and connected with a reservoir above, so that a current runs on the syphon principle. The largest pad used was three by two feet, and appears to have had a pronounced cooling influence.—*Med. Times and Gazette*, Dec. 16, 1871.

**On Artificial Cooling as Affecting the Elimination of Carbonic Acid.**—Gildemeister finds that cooling of the body causes increased production of  $\text{CO}_2$ , both in health and fever. The bath, however, in fever withdraws heat much faster than the increased production multiplies it.

Wertheim found that cooling a dog with ice increased greatly the depth of respiration and the amount of  $\text{CO}_2$  given off.—*Journal of Anatomy and Physiology*, Nov., 1871.

## DANDELION IN INDIA.

IN the *Pharmaceut. Journ. and Trans.*, Dec. 30, 1871, Mr. J. R. Jackson gives the following:—

The plants are cultivated in various parts of India, and the roots are collected between the months of September and February. To cultivate the plants properly, the following plan is recommended:—The seeds should be sown in beds, and the young plants, when sufficiently grown, should be planted out on ridges at a distance of nine inches from each other. This system of planting is the best suited for the production of large roots, which is the principal end to be obtained, and, to further insure this result, the flowers should be gathered as they open. The roots, after they are taken up, are washed clean and wiped dry.

*Taraxacum* roots are used in a variety of ways in India; one useful form is that of a paste, which is made by pounding the fresh roots, putting the mass into tins or jars, and gently baking or heating in an oven; when cool the paste is ready for use, and can be kept for a long time. To prepare dandelion-coffee, the roots are washed, dried in the sun, and cut up into small pieces, after which they are roasted in a similar manner to true coffee; they are then ground, and to every nine ounces of coffee one ounce of pounded dandelion root may be added; these proportions make an excellent and useful beverage. The use of this coffee in India has been much recommended.

Lieutenant Pegson, in a communication to the Agri-horticultural Society of India, advocating the more general cultivation and use of the dandelion, says:—"Medical men admit the value of this preparation, and I know several gentlemen in India who are, by their own admission, kept alive by the daily use of *Taraxacum*-coffee. It is fairly entitled to be called a specific for the cure of torpid liver, a complaint from which the majority of Europeans suffer; the fact being made known when they proceed to a cool or hill climate, and shiver and shake with cold while the thermometer is at 62° F. only. The sallow complexion of such men, women, and children, their languid movements, and their enjoyment of heat, all alike proclaim that they are suffering from sluggish action of the liver. The conserve of *Taraxacum* may be made into syrup for use. Horses and valuable dogs, sheep, and poultry, all suffer in India from disease of the liver. A bolus of *Taraxacum* conserve to a horse, and a pill thereof to a fowl, would be most beneficial, and act as a curative agent. Rabbits also suffer greatly from liver disease, but if they were supplied with a few (two to four) green *Taraxacum* leaves twice or thrice a week, the mortality resulting from this (hitherto) incurable disease would

disappear, and rabbits could then be extensively raised for the market."

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### PREPARED COLLODION FOR FRACTURES OF THE RIBS.

M. DUMAS, in the *Montpellier Médical*, summarizes in the following manner the rules for the application of this preparation. The substances required are:—

1. Three pieces of thin muslin, of the same breadth as from the sternum to the spine, and of a length stretching from the top of the thorax to the second rib below the fracture. If the last rib is fractured, we must make the preparation come down two or three finger-breadths on the abdomen, and dispense with reaching the top of the chest. We can, according to the case and the subject, augment the number of pieces of muslin, and, of course, of the layers of collodion.

2. Collodion *viciné* as fresh as possible. Mode of application: Apply alternately a coating of collodion and a piece of thin muslin impregnated with this liquid, and reunite the whole by a thick bandage. For that an assistant is indispensable, for the collodion dries so rapidly that the one who lays on the coatings cannot occupy himself with the *pose* of the muslin.

The author cites two cases, one of which is very curious: the union, retarded by hypertrophy of the heart, had not taken place at the twenty-fifth day. The collodionized preparations assured the formation of callus in a month. In the first case the relief was immediate.—*The Doctor*, Jan. 1, 1872.

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### CONTRIBUTIONS TO THE PHYSIOLOGICAL ACTION OF GETTYSBURG AND ADIRONDACK WATERS.

BY ISAAC OTT, M.D.

THE conclusions in the following paper are founded on a series of experiments which will be published in detail at some other time. The means employed were the same as those described in a paper on Congress water, published in No. 19 of the *Medical Times*.

#### GETTYSBURG WATER.

The observations were made during a period of six days. The quantity and quality of food and drink were nearly similar during the whole period, except that four hundred cubic centimetres of bottled Gettysburg water were taken early in the morning, before breakfast, in the last three days. The amount of sleep was the same, as was also

that of exercise, although the intensity of the exercise on the afternoon of the second of the Gettysburg-water days was considerably greater than on normal days. The average temperature on normal days at three fixed periods was 60°, 64°, and 62° F., while the barometric mean at similar periods was 29.5, 29.5, 29.5. On Gettysburg-water days, the average temperature at similar periods as on normal days was 51°, 54°, and 52° F.; the barometric mean at the same periods was 29.6, 29.4, and 29.3.

On Gettysburg-water days the daily average excess of all egesta over those of normal days from 6 A.M. to 12 M. was 335.96 grammes; from 12 M. to 6 P.M. the daily average decrement was 31.8 grammes; and from 6 P.M. to 6 A.M. the daily average increment was 2.9 grammes, making the total daily average excess of all egesta 307.0 grammes. On Gettysburg-water days the daily average excess just mentioned from 6 A.M. to 12 M. was made up of increase of "insensible perspiration" 24.06 grammes, of renal excretion 333.9 grammes; the intestinal excretions were diminished 22 grammes; the daily average decrease from 12 M. to 6 P.M. was formed of an increase of "insensible perspiration" 105.8 grammes, and a decrease of renal excretion equal to 118.05 grammes, and of intestinal excretion 19.6 grammes; the daily average increase of excretion from 6 P.M. to 6 A.M. was made up of a decrease of insensible perspiration 64.9 grammes, and an increase of renal excretion 67.8 grammes. The excretion of urea for the three normal days was 31.17, 29.53, and 32.96 grammes, the arithmetic mean of which is 31.22 grammes. The ureal excretion on Gettysburg-water days was 32.07, 29.72, and 32.14 grammes, the arithmetic mean of which is 31.31 grammes, thus showing an increased daily excretion of urea by .09 grammes. On the days when Gettysburg water was ingested there was a daily decrease of uric acid .065 grammes, of phosphoric acid .09 grammes, of chloride of sodium 1.27 grammes, and a daily increase of sulphuric acid .47 grammes. There was a relative increase during the use of Gettysburg water, and the most reasonable explanation of the increase seemed to be the retention of water. Thus it would appear that the retention of water whilst Congress water is being taken is not unique as regards our own economy.

#### ADIRONDACK WATER.

The observations on the physiological effects of this water extended over six days. The food was nearly the same in quantity and quality; exercise, sleep, study, and so on, were as similar as possible. The drink was the same in quantity and quality in exact series of days, except that six hundred cubic centimetres of bottled Adirondack water was taken half an hour before breakfast during the last three days.

The average of the temperature on normal days at three fixed periods was 63°, 64°, and 58° F., while the barometric mean at the same periods was 29.7, 29.6, and 29.6.

On Adirondack days, at similar periods, the average temperature was 60°, 64°, and 55° F.; the barometric mean 29.8, 29.7, and 29.7. The daily average excess of all the excreta during the ingestion of Adirondack water over those of normal days, from 6 A.M. to 12 M., was 552.3 grammes, from 12 M. to 6 P.M. 58.5 grammes, while from 6 P.M. to 6 A.M. there was a decrease of 131.3 grammes; thus making a total daily excess of all excreta 479.5 grammes. The aforementioned excess of excreta from 6 A.M. to 12 M. was made up of an increase of insensible perspiration 68.86 grammes, and of renal excretion 496.73 grammes, and a decrease of intestinal excretion 13.4 grammes; from 12 M. to 6 P.M. the excess was derived from increase of insensible perspiration 109.38 grammes, a decrease of renal excretion 90.40 grammes, and an increase of intestinal excretion 39 grammes; from 6 P.M. to 6 A.M. the decrease was made up of an increase of insensible perspiration 13.36 grammes, and a decrease of renal excretion 144.75 grammes. The urea excreted on the three normal days was 19.42, 20.91, and 16.07 grammes, the arithmetic mean of which is 18.80 grammes. On Adirondack days the urea amounted to 20.37, 19.05, and 18.64 grammes, the arithmetic mean of which is 19.35 grammes—thus showing a daily increase of urea .55 grammes. On Adirondack days the daily average increase of sulphuric acid was 1.11 grammes, of phosphoric acid .04 grammes, of chloride of sodium 1.64 grammes. While there was a daily decrease of uric acid .176 grammes, there was also a relative increase of weight on Adirondack-water days, which seemed, as in the cases of Congress and Gettysburg water, to be most logically accounted for by the retention of water, although during the experiments with the latter two the retention was in the afternoon, while during those with the Adirondack water it was mainly at night.—*Philad. Med. Times*, Jan. 15, 1872.

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### ELECTRICITY IN NERVOUS DEAFNESS.

DR. J. W. HOLLAND reports the following case in the *American Practitioner* for Jan. 1872:—

Mr. Robinson, aged forty-one, a medical student, was fifteen years ago, when convalescent from remittent fever, stricken with partial deafness in both ears, the loss of sense in the right ear being more pronounced than that in the left. During the period which has elapsed since, there has been but little amelioration of his hearing. The closest examination failed to detect any organic trouble. It was plainly a case of "nervous deafness," probably due to a sudden but enduring apathy of the auditory nerve.

The feeblest current from a volta-faradaic coil that was perceptible to the hand was

employed upon both ears successively. The auditory canal was filled with water, and the positive electrode, in the shape of a metallic conductor, insulated,—save at the end, where it terminated in a silver ball about the size of a barleycorn,—was inserted nearly to the tympanum. The circuit was completed by the negative sponge electrode being placed upon the superior cervical ganglion of the same or opposite side. A sitting of five minutes' length resulted in the immediate and considerable improvement of both ears. On reaching the street, the hearing was so much more acute than when the patient entered the office as to impel him to remark that "it was the revelation of a new world." Where before the tick of an uncommonly noisy watch could not be heard even when pressed hard upon the ear and mastoid process, the renewed sensibility enabled him to hear it nearly an inch away. The revival of the auditory nerves gained fresh force from each electrical sitting; and one may fairly presume that, as five applications have accomplished so much, by continued excitation the torpor may eventually be entirely removed.

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### HYPODERMIC INJECTION OF STRYCHNIA IN OPTIC ATROPHY.

IN a paper in the *American Journal of Med. Science* of Jan. 1, Prof. J. J. Chisholm confirms the results obtained by Prof. Nagel, of Tübingen, by injecting strychnia hypodermically in amaurosis. (See July number NEW REMEDIES, 1871.) He has found in three cases (one of which had resisted all treatment for seven months) of hemeralopia a few doses of the strychnia sufficient to effect a cure. A case of almost total blindness from atrophy, following choroido-iritis, which had been dismissed after long treatment as incurable, was subjected to this treatment. One-fortieth of a grain of the sulphate of strychnia in ten minims of water was ordered to be injected under the skin night and morning. In four days the patient could see sufficiently to go about the city alone; in six weeks he could read the large type heading the daily newspaper. In nearly every instance the patient experienced the brightening of the light in less than half a minute after the injection. In one instance in which the fortieth of a grain was accidentally thrown into a vein, the sensations of light and a feeling of muscular twitchings were apparently simultaneous with the emptying of the syringe.

Besides this case Prof. Chisholm has tried the treatment in a number of cases, "doing harm to none and benefiting all more or less." He commences usually with the one-sixtieth of a grain, gradually increased to one-thirtieth, twice a day.

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### EXTRACT OF BEEF.

M. MULLER, in continuing his observations upon prepared extracts of meat, thus expresses himself:—"I have shown that the crystallizable

azotic principles have no nutritive value, either directly or indirectly. They have none directly because they are the products of disassimilation which are eliminated from the economy; they have none indirectly because they in no way arrest the progress of denutrition." He then proceeds to inquire if those extracts have any pernicious influence, and observes that such an influence has, by various experiences, been shown to exist. For example, M. Hepp, Principal Pharmacien of the *hospices*, Strasburg, fed two dogs exclusively upon extract of meat, giving them that prepared by himself. One of the dogs perished at the expiration of fifteen days, the other at the end of twenty. These experiences, although seemingly conclusive, did not satisfy M. Müller. He subjected two other dogs to experiment, they being aged respectively three and four years. The first weighed 6,520 grammes, and received daily 200 grammes of bread, 20 of Liebig's extract, 200 of water, and 20 of fat. On the sixth day of this regimen the animal suffered from diarrhoea, but in other respects remained well till the eighth; on the ninth it whined pitifully.

The second dog weighed 6,940 grammes, received daily 200 gr. of bread, 40 of extract, and 200 of water. On the third day, diarrhoea; on the fourth, loss of appetite; on the fifth he refused his food; on the seventh it vomited. The experiences were not pushed beyond the eighth day, but six more elapsed before it was restored to its normal state.

These experiments differed from those of M. Hepp, inasmuch as he had given only extract of meat to his dogs, whereas M. Müller had given his animals 200 grammes of bread—that is, more than sufficient for their support—whence he concludes that, if they presented morbid phenomena, it is evident that they were *poisoned*. He next relates the results of a series of experiments performed upon six different cats. Two of those animals received daily, besides their ordinary food, 6 grammes of extract in a piece of veal "lights"—that small quantity being given because in a previous series of experiments it had been found that a larger quantity produced diarrhoea and death in the cats experimented upon. At the expiration of a few days the cats refused the "lights" containing the extract, and accordingly it was put into all the food given to them. At the end of a month the cats had increased in weight, the one by 44 grammes, the other 75, but in other respects there were very marked differences in their condition as compared to that of other two cats, to which *extract* had not been given. The former were dull, sleepy, their hair soiled, their eyes bleared. The experiments were now reversed during the succeeding month. At the end of three weeks the sickly cats had become active and playful—those to which in their turn the extract had been

given becoming affected with frequent diarrhœa, and, moreover, showing signs of laziness, as well as being easily fatigued. All four had, however, increased to some extent in weight. Once again the experiment was reversed. Fortunately for one of the cats, it effected its escape; but the result, as regards the others, led M. Müller to remark that on each occasion it is seen that the extract of meat has exercised a baneful influence.

But, before M. Müller's experiments, others had been performed by M. Kemmerich, of Vienna. According to the last named author, an exclusive régime of extract of meat *kills more rapidly than starvation*. He experimented on two dogs of the same size; to one weighing 1,247 grammes, he only gave water; to the other, weighing 1,340, he gave water, and five grammes of extract of meat (Liebig's). At the end of ten days the latter, which had been the more vigorous of the two, was unable to walk—at the end of twelve it perished. The first still lived; at the end of the twelfth day normal food was given to it—four days afterwards it was perfectly well. During the time that these experiments were in progress other dogs were fed upon the remains of the meat from which the extract had been prepared. It was seasoned with chloride of sodium, and under its use they continued in perfect health.

But M. Kemmerich would assign to extract of meat, to which he alludes, a directly poisonous action. He injected into the stomach of a rabbit, weighing one kilogramme, the amount of extract obtained from one kilogramme of horse-flesh. The animal succumbed. Such are the results obtained by M. Kemmerich, and now we ask ourselves with M. Müller, Can we attribute that poisonous action to the crystallizable principles of organic origin? With him we answer No! MM. Feltz and Ritter have shown that the introduction of those principles into the blood produces no injurious action. They have experimented upon rabbits with a solution containing 1 gramme of creatinine in 60 centimetres of water; they have injected into the jugular vein of a rabbit 10 cubic centimetres of that solution—that is to say, 0.17 of creatine—with no other effect than a slight increase of temperature in the animal, which had disappeared on the second day. M. Kemmerich had made a rabbit to swallow one gramme of creatinine, without inducing in it any morbid phenomenon whatever. With him we conclude the toxic action can only be attributed to the crystallizable principles of mineral origin, and, in effect, M. Kemmerich has demonstrated that the *ashes* alone of the extract produce death—that toxic action can only arise from the salts of the extract, and these salts are for the most part composed of potash.

The conclusions arrived at by the authors quoted are the following:—



The extracts of meat are not aliments directly, because they do not contain any element of materials; neither indirectly, because their nitrogenous principles do not arrest disassimilation. In a small dose they may be useful by the stimulant action of the salts of potass; in stronger doses, instead of being useful they produce an injurious effect. Given in the course of protracted illness, when the economy is weakened by prolonged abstinence, the salts of potassa have an injurious effect—the more so that the organism will have lost some of its chloride of sodium. So far from aiding nutrition they hinder it, by the direct action of the potassa salts upon the (blood) globules, retarding the absorption of oxygen by the predominance in the serum of salts, which absorb the carbonic acid; also, by not permitting the exhalation of the normal amount of acid gas they prevent the admission of the normal amount of oxygen.—*The Doctor*, Jan., 1872.

**New Method of Making Beef-tea.**—By Dr. H. C. Wood.—In order to meet the daily felt want of concentrated fluid meat food, a want not supplied by beef essence as ordinarily made, I have invented the following process, and found in practice that it works well. Take a thin rump steak of beef, lay it upon a board, and with a case-knife scrape it. In this way a red pulp will be obtained, which contains pretty much everything in the steak, except the fibrous tissue.

Mix this red pulp thoroughly with three times its bulk of cold water, stirring until the pulp is completely diffused. Put the whole upon a moderate fire, and allow it to come slowly to a boil, stirring all the time to prevent the "caking" of the pulp. As soon as it has boiled, remove from the fire; season to taste. In using this do not allow the patient to strain it, but stir the settleings thoroughly into the fluid. One to three fluid ounces of this may be given at a time.

**A New Base in Flesh Extract.**—Dr. H. Weidel states that he has found a new alkaloid in flesh extract for which he proposes the name of *carnin*. For the method of preparing this we must refer the reader to the original paper in *Ann. de Chem. et Pharm.* 158, 353, and *Neues Repertorium für Pharmacie*, Heft 10, 1871. *Carnin* is with difficulty soluble in cold water, easily so in hot, out of which on cooling it crystallizes in microscopic crystalline, carbonate of lime-like masses, which appear after drying as a lustreless, chalky (kreidig), loose mass. It is insoluble in ether and alcohol, decomposes on heating, burning on platinum foil, with a bluish flame and peculiar odor. Its solution is at first tasteless, afterwards bitter. It is not precipitated by neutral acetate of lead, but gives with the subacetate a precipitate soluble in boiling water and in solution of the neutral acetate. Its formula is  $C, H, N, O$ , and  $H_2O$ . Its chlorohydrate separates from the warm

solution in muriatic acid in glassy needles. By treatment with chlorine, bromine, or nitric acid, it is converted into sarkin. For further chemical detail as to this base the reader is referred to the original papers.

**To Obtain Kreatinine out of the Urine.**—Richard Maly has found that kreatinine may be separated in the following way. Take at least a litre of urine, and evaporate to one-fourth; pour off the fluid from the precipitated salts, precipitate with acetate of lead, and throw down from the filtrate the excess of lead by carbonate of soda or sulphuretted hydrogen. The filtrate is now neutralized with acetic acid or with soda, as may be required, and precipitated with concentrated solution of corrosive sublimate. This precipitate, consisting mainly of a combination of kreatinine with chloride of mercury, is decomposed with sulphuric acid in water, the solution decolorized with animal charcoal and evaporated. The remaining crystals are once or twice crystallized out of strong alcohol, and are finally obtained as a crystalline crust or in large, hard, shining prisms.—*Ann. de Chem. et Pharm.* 15911 S. 279, *Büchners Neues Repertorium für Pharmacie*, Heft 10, 1871.

#### TREATMENT OF SCARLATINA.

IN the *Northwestern Medical and Surgical Journal* Dr. E. H. Lewis states that he has obtained excellent results in severe scarlet fever by the following treatment:—If called early, and vomiting has not occurred, a full dose of ipecacuanha, repeated until free emesis is produced. Then of calomel one or two grains every hour till it purges. If rash be tardy in appearance, *hot* baths, followed by general dry friction, if necessary; and if these fail, linimentum terebinthinæ. When the fever becomes intense, the rash being well out, cold effusions, sufficiently often repeated to lower the temperature, anointing with oil, free application of bacon fat to the neck; if the throat be not ulcerated, strong gargle of capsicum and chlorate of potash; also, often inhalations of steam. He says further: cases of throat complication were often cut short by the free use of ice, taken in the mouth and allowed to dissolve; or when the patient was small, I used to pound it fine and enclose it in a piece of gauze placed in the mouth of the little sufferer and allowed to melt.

The following prescription I used with considerable advantage in some cases:—

℞ Potas. chlorat.....	3 iss.
Tr. ferri chlor.....	f 3 ij.
Syrupi simplicis.....	℥ 3 iss.
Aquæ fontanæ.....	℥ 3 iiss.

M. ft. sol. Dose, teaspoonful every two or three hours to a child from three to eight years of age, adding a small quantity of quinine if a tonic was needed.

I have seen great benefit arise from the use of a weak solution of chloride of sodium thrown up the nostrils by the posterior nasal syringe, especially where the nostrils and posterior nares were covered with viscid mucus, and where the only hope for young children was the keeping the nostrils clear for breathing purposes. Where this remedy is properly applied its effects are excellent and well worthy of trial, as we can do this when the jaws are so swollen and stiff that the mouth cannot be opened for the purpose of cleansing the posterior part of the throat of its mucus.

Throughout the attack the bowels must be kept open with calomel or magnesia.

Dropsy following the fever the doctor treats with blood-letting, iron, digitalis, calomel, and jalap.

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## THE ANTISEPTIC TREATMENT OF SMALL-POX.

BY ARTHUR ERNEST SANSOM, M.D.

THE interesting communication of Dr. Hjaltelin on "Small-Pox imported into Iceland by French Fishing Vessels, stamped out by Quarantine and Sulphurous Fumigations" (*British Medical Journal*, November 4th, 1871, p. 519), affords most valuable evidence in support of the opinion I have often submitted—that the course of zymotic diseases can be modified in intensity and in duration by the internal administration of antiseptic agents. The following case—though, of course, individual instances can have but little value as evidence in regard to the major proposition—may serve to illustrate the method of putting in force the antiseptic treatment of the disease.

I was called on October 13th, 1871, to visit Miss E. T., aged 18. She had high fever, subdelirium, and vertigo. The pulse was 128. Temperature, 105 deg. Fahr. The tongue was red, dry, with brown streak down the centre; the pupils were widely dilated. A few spots closely resembling those characteristic of typhoid existed on the abdomen, but there was no abdominal tenderness, distention, nor diarrhoea. The diagnosis was complicated, for the young lady had lately been staying in a locality wherein typhoid was prevalent. There was no lumbar pain. I gave a guarded diagnosis, but considered it most probable that the case would prove to be one of typhoid. I ordered cool sponging; milk and beef tea; half an ounce of brandy every four hours; a scruple of sulphite of sodium in solution every four hours.

On October 14th the pulse was 124; the temperature was reduced to 102 deg. Fahr. Several papulæ were present upon the face. The case now assumed the aspect of variola. On October 15th, papulæ were abundant over the face, arms, and legs. On October 16th, the signs of general discomfort had subsided; the patient only complained of irritation of the papules, which began to become pustular. On the 17th I touched the centre of each pustule on her face (over sixty in number) with a fine camel's-hair pencil, dipped in strong liquid carbolic acid, taking care not to allow any to reach the sound skin, and ordered a solution of one part of carbolic acid in three of olive oil to be applied over the individual pustules night and morning. On October 18th the patient was well, all irritation from the pustules having subsided. The carbolic liniment was continued; the surface of the skin was sprinkled now and then with oatmeal water. The temperature from that date never rose above the normal; there was no discomfort whatever; the pustules all dried up, and, on the eighth day, a large number had completely fallen off, leaving no cicatrices; the others were quite dry and scaly. On October 23d, the sulphite of sodium was discontinued, and sulpho-carbolate of iron given in five-grain doses three times a day. The surface of the body was washed with coal-tar soap to aid disinfection.

The double principle of the antiseptic method of treatment is the arrest of the disease-process in the individual, and the prevention of spread to the community. The same class of agents which common experience declares to be disinfectants can be administered to the living body with at least a fair hope of their accomplishing that destruction of disease-germs which they accomplish externally to it. Carbolic acid has been administered by many, especially by French physicians; but I believe that, in many cases, carbolic acid and its compounds can be advantageously replaced by other antiseptics, especially in those wherein head-symptoms are prominent. I think it very probable that we shall find certain antiseptics are best suited to the treatment of certain diseases; in scarlatina, diphtheria, and all zymotic ailments in which the throat is involved I have found the sulpho-carbolates specially valuable. In his successful cases of variola, Dr. Hjaltelin employed the ordinary sulphurous acid in fluid-drachm doses every third hour. I have rather inclined to the use of the sulphites recommended by Polli—they are powerful and direct antiseptics, easily administered and readily absorbed. I believe that in this country the error has been made of administering them in insufficient doses, or else of employing the hyposulphites—purgative salts, and far less efficient as antiseptics.

The external treatment of the pustules is most important. No agent seems to me so valuable as carbolic acid; its application in the pure

form to the summit of each pustule is perfectly painless. It is not necessary to touch each individually at one visit, but at subsequent times to touch those which have been omitted previously. I have found nothing so effectually disguise the odor of the carbolic acid, without impairing its antiseptic efficacy, as oil of wild thyme (*oleum origani*). Thymic acid is itself a well-known antiseptic. The effect of the application of the carbolic acid is at once apparent; the pustule first becomes white, and then dries up. The carbolic oil, afterwards applied, penetrates amongst the virulent crusts, and is far more efficient than any watery application. The general surface of the body may likewise be sponged with any soluble antiseptic. I believe the coal-tar soap to be very valuable for washing the surface of the body. By the antiseptic method of treatment, external as well as internal, the patient is really disinfected from the onset of his malady, and the benefits are manifest alike upon himself and upon those subject to the contagion.—*British Medical Journal*, Nov. 25, 1871.

#### VACCINATION WITH GLYCERIZED LYMPH.

DR. WEISS has contributed some important statistics on this subject to the *Vierteljahrschr. für gerichtl. und öffentl. Medizin*. His observations were made during an outbreak of small-pox among the war-prisoners at Alt-Damm in December, 1870, and January and February, 1871. He first vaccinated three children with lymph mixed with glycerine, brought from Berlin. The lymph taken from these children was mixed with glycerine; and, from January 16th to March 6th, he revaccinated with the diluted lymph 5,801 men, the operation being successful in 1,586 cases. All the subjects had been vaccinated in youth, many two or three times; and in 4,023 there were distinct cicatrices. From November 21st to January 21st, among 2,687 men, there were 72 cases of small-pox, with 7 deaths. After the revaccination, from January 25th to April 15, among 8,851 men, there were 195 cases, with 22 deaths; viz., among the successfully revaccinated, 6 cases, no deaths; among those in whom revaccination did not succeed, 25 cases, no deaths; among the unvaccinated, 164 cases, with 22 deaths. Dr. Weiss mixes the lymph from the arm with five parts of glycerine and the same quantity of distilled water. He says that, placed in bottles covered with bladder, it remains good for a long time.—*British Med. Journal*, Dec. 23, 1871.

#### SANTONIN.

THE following account by Dr. R. Farquharson of the action of santonin upon himself is extracted from the *British Med. Jour.* :—

1. *Effect on Vision.*—Twenty minutes after swallowing five grains, I observed flames to assume a decidedly yellow color, as though spirits were being burnt. Ordinary white gas globes became deeply tinted with yellowish-green, and writing-paper presented the same phenomena in a somewhat less marked degree. During three hours the tints gradually increased, after which they faded by slow stages, until vision was restored to its normal standard.

The precise conditions under which these singular results take place, and the exact alterations of color observed, have been submitted to most exhaustive study by a German physiologist, whose name I cannot now recall. *Post-mortem* examination proves that a true staining of the retina is rapidly produced, but it is not probable that this can be detected during life by the ophthalmoscope. This opinion I base on the authority of an eminent oculist, and on the fact that, in the somewhat parallel group of cases where yellow vision attends jaundice, I have been unable to discover any unnatural appearance on careful inspection of the fundus of the eye.

2. *Effects on the Urinary Organs.*—Five grains were taken at bedtime, and next morning an irresistible and almost uncontrollable desire to micturate was felt, the act being attended with some irritation and smarting. The urine was of a deep saffron yellow, staining the pot and linen precisely as bile. It was of specific gravity 1.028. The quantity was decidedly increased, and the urea was somewhat in excess. The diuretic action continued during the day; and it was not until eight o'clock P.M. that the secretion was quite free from foreign pigment.

3. *Effects on the Digestive Organs, and General Symptoms.*—Nausea and dryness of tongue were generally present; and on one occasion, after a ten-grain dose, well-marked tenesmus was experienced both by myself and by a friend who shared the experiment. After five grains, sleep was generally disturbed, and I usually woke unrefreshed, with sickness, frontal headache, and deficient appetite. But the best marked symptom, and one which I have not hitherto seen described, was a feeling of profound and most unusual depression, accompanied by so much irresolution and want of confidence in my own powers as to render me quite unfit for work of any kind. This invariably followed even a single five-grain dose; and, beginning with dulness and heaviness, ran on into very much that sort of melancholia which I imagine jaundice sometimes produces. This denotes an effect on the nervous system which ought not to be overlooked; and, should further investigation prove its occurrence to be constant, and not to depend on any peculiar idiosyncrasy of my own, we may yet find in *santonin* an agent of some value in the almost unexplored regions of mental therapeutics.

## VERATRUM VIRIDE.

DR. H. G. LANDIS reports (*Northwestern Medical and Surgical Journal*, December, 1871) two successful cases of peritonitis or cellulitis following delivery treated with veratrum viride; the first case had relapsed from recovery, after a previous threatening. We extract as follows:—

May 25th—A.M.—Abdomen very tender in right iliac fossa and considerable pain, independent of any pressure; pulse frequent; face flushed. An examination, per vaginam, did not reveal any pelvic tumor, but the vagina was very hot. She was at first placed on stimulants and a febrifuge, but vomited after taking it, copiously, a greenish fluid. Her condition was now truly alarming; the pulse so extremely rapid, the flushed and anxious countenance, the alae nasi widely dilating, and the hurried breathing, all demanded prompt relief. She was then placed on the following treatment, which, for convenience' sake, I have arranged in a tabular form, an idea suggested by Dr. Byford's work on Diseases of Women:

TIME.	MEDICINE GIVEN.	PULSE.	REMARKS.
May 25, 4 P.M.	Tinct. ver. vir. gtt. x.	132	Vomited greenish fluid.
5 "	" " " "	133	
6 "	" " " " morph. gr. $\frac{1}{4}$	128	
7 "	" " " " "	130	
7:30 "	" " " " "	133	
8 "	" " " " " gr. $\frac{1}{4}$		
9 "	" " " gtt. viij. and whiskey f $\frac{3}{4}$ j.	122	
9:30 "	" " " " "	120	
10 "	" " " gtt. v. " "		
12 "	" " " gtt. ij. morphia gr. $\frac{1}{4}$		
May 26, 2 A.M.	" " " " "		
4 "	" " " " "		
8:30 "	" " " " "	106	Looks much better.
9:45 "	" " " " " gr. $\frac{1}{4}$	110	
12:30 "	" " " " viij. " gr. $\frac{1}{4}$	112	
3:30 "	" " " " x. " "	116	Whiskey, f $\frac{3}{4}$ j.
6:15 "	" " " " " gr. $\frac{1}{4}$	116	" "
7:30 "	" " " " " "	104	
8:30 "	" " " " viij. " gr. $\frac{1}{4}$	104	
10 "	" " " " v. " gr. $\frac{1}{4}$		Vomited at 11 P.M. Slept well after 12 P.M.
May 27, 9 A.M.		94	Tot. verat. viride taken in 48 hrs. —gtt. 120.

This table shows that 50 gtt. of a good tincture were taken before the pulse was affected, but that afterwards small doses sufficed to keep it down; with the fall in the pulse all the symptoms abated, and the woman finally recovered. In the second case ten drop-doses were first employed, but failed to give relief; larger doses we then administered as follows:—

TIME.	MEDICINE GIVEN.	PULSE.	REMARKS.
August 4, 1870.			
12:30 A.M....	Tinc. ver. vir. gtt. xv. morph. gr. $\frac{1}{4}$	• 120	In whiskey f $\frac{3}{4}$ ss.
8:30 "	" " " " " gr. $\frac{1}{4}$	122	T. 104° vomiting.
9:30 "	" " " gtt. xx. " gr. $\frac{1}{4}$	120	
11 "	" " " gtt. x. " gr. $\frac{1}{4}$	112	Vomiting soon after.
12:30 P.M....	" " " " " " "	108	
4 "	" " " " " tinc. opii. ℥xv.		} Vomiting soon af- ter each dose.
6 "	" " " gtt. v. " " "		
8:30 "	(by enema.) " " gtt. l.	88	Skin moist and pleas- ant. T. 103°.
9:30 "	Tinc. ver. vir. gtt. xv. morph. gr. $\frac{1}{4}$ } chloral gr. xv. }	100	Slept pretty well.
August 5, 1870.			
8 A.M....	" " " gtt. x. morph. gr. $\frac{1}{4}$	114	T. 103°.
12 M....	" " " gtt. xx. " gr. $\frac{1}{4}$	120	
4 P.M....	" " " " " " "		
6 "	" " " gtt. xv.		
9:30 "	Tinc. opii gtt. xxx. chloral gr. xx.	84	T. 104°.

Here again we see the effect of stopping the remedy, in the sure quickening of the pulse and the amelioration attendant on its resumption, though larger doses were required to attain the same end as in the first case. The fever and alarming symptoms subsided after the 6th, on which day the last dose of veratrum was given. On the 7th, the temperature was 102 degrees, and on the 8th, 100 degrees.

### TETANUS RECOVERY UNDER THE USE OF CHLORAL AND OF ELECTRICITY.

DR. HAMILTON GRIFFIN reports in *The American Practitioner*, p. 93, 1872, a case of tetanus in a woman. The affection came on three weeks after stepping upon a piece of glass, and was slow in development, but when Dr. Griffin first saw her, on the tenth day, the symptoms were very severe. The reporter says: I ordered fifteen grains of chloral, combined with one-fourth grain muriate of morphine, every four hours; chloroform inhalations to be used during spasm.

July 20th, 6 P.M., pulse and temperature remain normal; spasms occur every six hours; muscles slightly relaxed, but opisthotonus complete during paroxysm.

July 21st, called in Prof. J. W. Holland, who applied the continuous galvanic current. The current produced muscular relaxation and relief from pain in fifteen minutes.

July 22d, pulse and temperature normal; no spasms since last visit; pain as before; mouth opened one-fourth inch with great difficulty.



The chloral, morphine, and galvanism were continued for several days, when the patient was discharged cured.

Dr. Holland's electrical report is here added in full :—

On July 21st an active current from sixteen Stohrer's cups was passed directly through the muscles which close the jaw, with no advantage. The positive electrode was then placed upon the infraorbital nerve, and the negative changed about among the masseters and temporals of the two sides. The only effect was to relieve some pain just anterior to the ear. The antagonist muscles were next excited, in the hope that the experience of Dr. Mendel\* in tetanus would be repeated; still the jaw did not yield. As the patient made great complaint of the epigastric pain, the phrenic nerve was brought under the electrical influence. The negative electrode was pressed firmly upon the integument behind the sterno-mastoid muscle, and the positive was directed to the top of the ensiform cartilage. Relief from the spasm of the diaphragm was immediate, the distress disappeared, and the rigid sterno-mastoid became relaxed. When the positive pole was applied upon the neck behind the angle of the jaw, the negative being retained in its position several inches below, still more marked benefit was had. The grin vanished, and after an application in this position, lasting six minutes, the teeth could be separated nearly half an inch.

July 22d, it was found that the neck had retained its suppleness, though there was some epigastric pain, and the jaw could be depressed only a quarter of an inch. The general condition was much improved. The same current was used in the manner suggested by the previous day's experience, with fine effect. The pain was dismissed completely, and the jaw was unlocked nearly an inch. The rectus and internal oblique of the abdomen were treated by the constant current for ten minutes, and thereby were loosed from their tonic contractions. A few days' galvanization was resorted to, and always with notable softening of the spasms, steadily progressing to a complete restoration to health.

**Tetanus.**—Among other interesting papers lately read before the Academy of Sciences in Paris, was one by M. Demarquay, in which he showed that several cases of lock-jaw had been cured by extremely hot-air baths, followed by the injection of morphia under the skin.—*The Lancet*.

In the *Lyon Méd.*, October 1, Dr. Cartaz reports 4 cases of tetanus following gun-shot wounds, treated with large doses of opium, and resulting in 2 deaths and 2 recoveries.

In the Canada *Lancet* of Dec., 1871, is reported a fatal case follow-

\* Quoted in Althaus's *Medical Electricity*.

ing gun-shot wounds. Treatment, opium in small quantities, cannabis indica, chloroform, and support.

**Chloral in Tetanus.**—M. Garnier (*L'Union Médicale*, November 14, 1871) refers to several cases in which chloral was used in the treatment of tetanus occurring in very young persons, and says that it is in such patients that it will be found most useful. In a child thirteen years of age four grammes of chloral were given at a dose, with the effect of producing a marked amelioration of all the symptoms. A complete cure was effected on the thirty-fifth day, after one hundred and eighty grammes had been taken. In a child aged seven days, affected with trismus, chloral was dissolved in the milk of the mother, and injected into the child's nose during the paroxysms. Twenty-five grammes were thus administered, and on the ninth day the cure was complete.—*Philad. Med. Times*.

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#### ON THE FIRST INSENSIBILITY FROM ETHER.

BY JOHN H. PACKARD, M.D. (one of the Surgeons to the Episcopal Hospital, Philadelphia).—When the vapor of sulphuric ether is inhaled, there is, as is well known, an early stage of complete muscular relaxation, in most cases soon succeeded by an excitement, which in turn gives way to the complete unconsciousness which is so desirable for protracted surgical procedures. It is not, however, so generally known that the muscular relaxation just mentioned is attended with entire anæsthesia. Advantage may be taken of this fact to perform many operations which, although intensely painful, occupy but a moment of time,—such, for example, as the opening of whitlows or other abscesses. In this way much time is saved to the surgeon, while the patient is spared not only the suffering of the knife, but the vomiting, headache, and tedious return to consciousness which are so apt to follow the protracted administration of ether.

Let the patient lie on a sofa or reclining-chair, and take in his own hand a folded handkerchief or towel, with about  $\frac{1}{3}$  ss of ether poured over it. He should be instructed to breathe out strongly, and then to apply the inhaler at once firmly to his face, and to hold it there. He may be told also to raise up his other hand, and his attention repeatedly directed to keeping it up. As soon as the hands fall, the surgeon, having everything previously in perfect readiness, promptly accomplishes his object, and the patient is at once allowed to "come to."—*Philadelphia Med. Times*.

## TREATMENT OF HOSPITAL GANGRENE.

IN the *American Practitioner* of Jan. 1, 1872, Dr. Carl Proeglee indorses the following treatment instituted by Prof. Koenig, of Rostock, for the treatment of hospital gangrene during the late war:—

A caustic for hospital gangrene should be, first, constant in its action; second, it should have the power to reach the deeper structures, and control the healing process of the same; third, convenience of application; fourth, it should be competent to reach all the folds and pouches of the part. According to Koenig, chloride of zinc combines all these requisites. It should be but little diluted, rather oily. Bits of cotton should be dipped in this solution, and afterward pressed out. A sufficient number of these pieces are placed either flat on the surface of the wound, or partially pressed, in variously-formed pellets, into the folds of the tissues. The advantage of this method consists in this, that the surgeon himself may prepare the solution and press these small tampons into the wound. Zinc acts only as a caustic where tissue without epithelium is present. The tampon accommodates itself to the parts, while we can measure the depth and time that it should remain. The longer it remains the more will the caustic reach the deeper parts. Before applying the caustic, chloroform to blunt the sensibility should be used. It is sufficient for most cases to let the tampon remain eight or ten minutes; very seldom are fifteen or twenty minutes necessary. The crust formed is whitish, and it is always five or six days before it separates. But we may see much sooner whether or not gangrene has stopped spreading. The signs are that the inflammatory redness on the periphery of the wound begins to fade, and the general appearance of the patient improves, the fever subsiding. In the mean time the wound may be moistened either with lime-water or carbolic-acid compresses. We have in this way healed very many deep wounds, when they could be reached, with a single use of the caustic, so that the high fever subsided in two days. If untouched parts should remain, the caustic ought to be used again; but it is very seldom that we observe them after thoroughly removing the crust. The ugliest wounds for healing are compound fractures from gun-shot wounds, in which there is an infected cavity between the fragments, or in wounds which, on account of their being covered by bones, cannot be exposed; as wounds under the scapula. Here one use of the caustic will seldom be sufficient.

Koenig points out the treatment of the bleeding which occurs in the cases already described. After gangrenous destruction of the femoralis, after ligating the vessel, hemorrhage ensued, and as *ultimum refugium* the *iliaca externa* was tied, and bleeding controlled; but the

result was gangrene of the foot, and for that reason the tampon was substituted afterwards in hemorrhage in gangrenous tissues. In two individuals very much bleeding occurred; in one probably from the ulnar artery in, fracture of the ulna, in the other from a wound on the outside of the femoralis, below Poupart's ligament. In the latter, by dividing the sartorius and the greater part of the rectus and tensor fasciæ, between which the gangrene extended, the bleeding was at once arrested by the zinc tampon. In the former the zinc tampon alone was sufficient.

If the following mechanism of the process of bleeding be accepted, it is self-evident why and how the arrest of hemorrhage occurs by using the caustic. We suppose that the sheath of a vessel, with the perivascular tissue, is first attacked by gangrene, but not destroyed entirely down to the border of the gangrene; and that the infected vascular tube thus encircled with gangrenous tissue can neither form a thrombus nor the vessel itself retract. Both disadvantages must, under favorable circumstances, be bettered; for by using the caustic both the vessel and perivascular tissue will be deeply destroyed, the formation of clots effected in the now healthy tissue, and retraction of the vessel will then be able to accomplish the closure.

**Local Application of Camphor in Hospital Gangrene.**—At the meeting of the French Academy, June 19, M. A. Netter offered a memoir upon this subject. He claimed to have obtained most excellent results. The powder is placed thickly on the sloughing wound, and should be followed by almost immediate amelioration in 48 or 60 hours.—*Gazette Médicale*, July 8.

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#### SUBCUTANEOUS INJECTION OF MORPHIA.

Prof. Estlander, of Helsingfors, in No. 39 of the *Deutsche Klinik* for 1871 commends most highly the treatment of erysipelas by hypodermic injections, as being much superior to all other methods; the erysipelas often yields at once. An eighth to a quarter of a grain is injected into the sound tissue, at from one to two inches from boundary line, tincture of iodine sometimes applied locally, and compression when practicable. An emetic is always given first, and the injection is rarely repeated more than once in 24 hours. Ipecacuanha and sulphuric or phosphoric acid are generally given internally; the sesquichloride of iron is not considered of any value.

**Sulphate of Iron.**—Mr. Hulke, of the Middlesex Hospital, believes in the great value of solution of sulphate of iron (10 grs. to fl. 3) applied

vain by a rub in erysipelas. In circumscribed erysipelas he applies the usual ointment of the Oil of Turpentine and castor-oil.—*British Medical.*

**Sulphate of Iron in Poisoning by *Rhus Toxicodendron* and in Erysipelas.**—Dr. Webster saw a young man the day after exposure. His face was so swollen that he could see with neither eye, and there was a large erysipelas in the arms and scrotum. Ordered Iron of Sulfate (Feas. S. O.) applied on one layer of cotton cloth. In two or three hours he could open one eye, and the next morning was very much improved. Recovered rapidly.

Dr. Good spoke of the use of sulph. ferri in erysipelas, 5 j. to ʒ ij, applied in the same way. It relieves itching, redness, and swelling very rapidly.—*Lynn Med. Soc. Trans., Boston Med. and Surg. Jour., Dec., 1871.*

## BROMIDE OF SODIUM.

BY MARGARET CLYMER, M.D.

WHATEVER may be the real therapeutic value of the bromide of potassium in the treatment of epilepsy and other disorders of the nervous system, it has come to be generally acknowledged that its prolonged use is often attended with serious inconveniences, and even dangers; as dizziness of the mental faculties, loss of memory, great muscular feebleness of the lower extremities, etc. I have heard many epileptics declare that they would rather suffer from their fits than from the condition brought on by the doses of bromide of potassium necessary to suspend their attacks, or lessen the number of them. It is, therefore, a matter of some moment to those who treat nervous disorders to find a remedy of that efficacy so largely claimed for the bromide of potassium in some affections.

There is reason to believe that in the *bromide of sodium* a happy substitute has been found that will fully meet every indication for which the bromide of potassium has been given, while it is much better tolerated by the system, and free from the objections which are justly urged against the latter. For some time past, I have habitually used the bromide of sodium in all disorders of the nervous system where before I prescribed the bromide of potassium, and, so far as my own experience goes, speak positively to this point. I have given it in a number of cases of epilepsy continuously for months without any of the unpleasant symptoms which so constantly follow the prolonged administration of the potassium salt, excepting the eruption, and with the best results in mitigating or suspending the paroxysms. Dr. De-chaîne has given the bromide of sodium for a year without its producing the systemic saturation so frequent during the long and continuous

exhibition of the bromide of potassium. According to Nimias, of Venice, this latter salt accumulates in the various organs, the brain, spinal cord, lungs, liver, etc., and is neither readily eliminated nor assimilated (see *The Medical World*, July, 1871, p. 31). Soda is the alkali found throughout the body, and in all the secretions, and would naturally be more readily absorbed and appropriated than the potassic salt. Another point in favor of the use of the sodic rather than the potassic salt, and which, so far as I know, has not yet been mentioned, is the fact of the depressing influence of the salts of potash on the heart when they are largely or long given. No such effects are alleged to follow the continuous use of the salts of soda.

The taste of the bromide of sodium is much less unpleasant than that of the bromide of potassium, being very like common salt, and it may be used to replace the latter, mixed with the food, as with bread and butter, eggs, in milk, etc. Hence it is of more easy administration than the bromide of potassium, to the taste of which some persons have invincible repugnance, and increasing with its use.

It is of the first importance that bromide of sodium should be perfectly free of all impurities, particularly of iodine. Larger doses of the hydrated salt are required than of the anhydrous, for it crystallizes with four equivalents of water. According to Dr. Morin (*Comptes Rendus* of the Académie des Sciences, January and April, 1870), anhydrous bromide of sodium contains 11 per cent. more bromide than bromide of potassium. Drs. Morin and Balard, the discoverer of this salt (1826), give the following table of the approximative amount of bromine in the corresponding quantities of bromide of sodium and bromide of potassium:—

BROMINE.	BROMIDE OF SODIUM.	BROMIDE OF POTASSIUM.
Grammes.	Grammes.	Grammes.
3.33	4.33	5.00
6.66	8.66	10.00
10.00	13.00	15.00
13.33	17.33	20.00
16.66	21.66	25.00
20.00	26.00	30.00

The doses of bromide of sodium are about the same as those of bromide of potassium. In epilepsy, I usually give 20 grains three times daily, and have rarely gone above that amount. It sometimes seems to cause or encourage constipation.—*New York Medical World*, Oct., 1871.

**Hypodermic Injection of Ergotin in Hemorrhage.**—In the *London Practitioner* of December, 1871, Dr. C. Currie Ritchie details a number of cases in which sudden arrest of hemorrhage followed the hypodermic injection of ergotin. He found Langenbeck's formula

the best in practice. The solvent used in this ~~several~~ parts of ergotine and rectified spirit. The dose used was from 1 to 5 grains of the ergotin. The following is a condensed account of one of his cases:—

Mrs. D., æt. 60, had, during the two preceding days, been constantly spitting blood, except during an intermission of 3 hours. Ergot had been given by the stomach without benefit. At the time of the injection (5 grs.) she was expectorating blood profusely. The only physical signs were a patch of dullness, about the size of the palm, over the left back, between the angle of the scapula and the spinal column, with slightly increased vocal resonance, and attenuation of the second sound of the heart. There was absolutely a hemorrhage after the injection. [I have used the fluid extract of ergot hypodermically in one case with immediate arrest of a long-continued hemorrhage, at the production of so much local trouble as to find the practice rare in desperate cases.—Ed. N. R.]

In the *British Medical Journal*, June 2, 1871, Dr. Wm. Allen Jamieson details a case in which repeated hemorrhage from the lung was at once arrested, each time of its occurrence, by the injection of five grains of ergotin, dissolved in ten minims of distilled water, into the cellular tissue of the arm.

**Ergot in Chronic Diarrhoea.**—In *Schmidt's Jahrbücher* of December, 1871, are detailed three cases of severe chronic diarrhoea treated with ergot successfully after the failure of other remedies originally published by Dr. A. Palmberg in the *Franka Väterzeitung*, 2, p. 75, 1-71. Dr. P. has obtained the best results from the aqueous extract of ergot, and in several cases combines it with iron, thus:—

Take of watery extract of ergot.....2 grm. (3 grs.)  
Lactate of iron.....12 grm. (15 grs.)  
Sugar.....3 grm. (3 grs.)

Mix and divide into ten powders. One every two or three hours according as required.

### On the Influence of Quinia upon Oxidation of the Blood—

In his inaugural dissertation A. Schultze investigates the action of quinine upon the post-mortem formation of acid in the blood, discovered by Zuntz. He finds, in agreement with the later experiments of Scharrenbroich and Zuntz, that both the slow acidifying of the defibrinated blood, as well as the decided production of acid which precedes the coagulation, are checked by it. These experiments are important, as indicating that the influence of quinine upon the most changes are independent of the nervous system.—*Centralblatt für die Medic. Wissenschaft.*, Nov. 12, 1871.

**Iodide of Iron as a Remedy in Incontinence of Urine.—**

Dr. John Barclay says that he has tried most of the approved remedies in this disease, and, before he stumbled upon the syrup of the iodide of iron, found atropia or belladonna by far the most certain and trustworthy. Tincture of iron is much employed, but after frequent and persevering trials with it I have been always disappointed. During the past two and a half years twenty cases of incontinence of urine have been treated by me. The medicine invariably prescribed has been syrup of the iodide of iron alone, and, so far as I know, there have been no failures. I have notes of all the cases, but only eleven in the completed state, since the other nine, who came from a distance, did not return to say what was the result. The probability is that they were cured, otherwise they would not have been got rid of so easily. At all events, the eleven who did report themselves, or who were continually under observation, were all cured, the improvement in several of the cases following so closely upon the administration of the remedy as to leave no doubt that the good effect was due to the syrup. Dr. Manson, of Banff, and Dr. Smith, of Kinnairdy, have both found the medicine equally satisfactory. Dr. Smith says that he tried it, only a fortnight ago, on a boy, who for a long time had been a sad martyr both to diurnal and nocturnal incontinence, and who had resisted all other remedies, but who, upon giving him the iodide, was in two or three days almost well." The doses given were from fifteen minims to half a fluid drachm three times a day, according to age.—*Med. Times and Gazette*, Dec. 17.

**Injection of Strychnine in Amaurosis.—**

In the *Boston Medical and Surgical Journal*, April 27, is recorded a case at length of functional amaurosis of left eye, without evident anatomical change, following gunshot wound, treated by hypodermic injections of strychnine, by Prof. Nugel, of Tübingen. The first injection was made on the 5th of January, 1.002 grain strychnia in left supraorbital region. Fifteen minutes afterwards there was a slight clearing up of visual field of the eye; in half an hour the difference between light and darkness could be recognized when the patient stood several feet from the window. The second and third injections were made on the 6th and 7th of January respectively.

On the 8th he could read the largest of Jaeger's test types, and with the aid of a convex 4 could make out words of Jaeger No. 15. On the 10th of January, after the sixth injection, he could read without any glass, with the left eye, Jaeger No. 1, at a distance of six inches. The next day there was some abnormal sensitiveness of the eye, and treatment was intermitted until the 12th. After each of the ensuing injections there was a very marked increase of the visual



field until the 15th of January, when, after the ninth injection, the field had reached its normal size. The patient could read Jaeger No. 1 at a distance of seven inches, and Jaeger No. 17 at twelve feet distance, and was discharged as cured.

**On the Influence of Sulphate of Quinia and Sulphate of Potash upon the Temperature and Heart's Action,** by W. BLOCK. Dr. B. found in his experiments after small doses of quinine, slight acceleration of pulse and depression of temperature; after large doses, sinking both of the pulse frequency, and temperature; and after fatal doses, rapid slowing of the pulse till the heart stood still. He thinks the idea that the sinking of temperature causes alteration of the heart's activity disproved by his experiments, in one of which the pulse rose, although the temperature fell remarkably; nor does the idea that the alteration of temperature is owing to depression of heart's action meet with more favor, because doses which enhanced the cardiac activity lessened the temperature. The actions on the heart and temperature are, therefore, independent. Lowering of arterial pressure only occurs in those cases in which a large dose produces slowing and weakness of the contractions of the heart.

Sulphate of potash has a similar influence to quinine, in that small doses cause increased frequency of pulse, with lowering of temperature; whilst large doses depress both the rapidity of pulse and temperature.—*Centralblatt für die Medicinischen Wissenschaften*, Feb. 1871.

**Improvement of Mother's Milk.**—Mr. C. Meymont Liby, says the *London Lancet* (April 15), was consulted by a lady, who stated that her infant was becoming miserably smaller every day. On examination of the mother he found distinct consolidation of one apex, and on an examination of her milk he found it very deficient in fat. He ordered the milk to be drawn off at stated times and mixed with a given quantity of mutton suet, and that the child be fed with this from a bottle. No medicine whatever was prescribed except an occasional powder to keep the bowels regular. The result was astonishing: at the end of a fortnight the mother stated "she could see it grow," and on a continuance of the plan the child thrived amazingly. The plan, Mr. Liby says, he has employed in other similar cases with like result.

**Prurigo Treated by Ointment of Iodoform.**—Prof. Tantarri, of Naples, has used the ointment of iodoform in obstinate prurigo. This compound, first brought prominently into notice by Bouchardat, is now employed extensively, not only for glandular enlargements, but also, owing to its anæsthetic properties, in skin diseases accom-

panied with intense pruritus; its odor is much more agreeable than that of chloroform, resembling that of saffron. Moretin and Humbert recommend it for internal use as possessing all the advantages of iodine, of which it contains 90 per cent., without any of its inconveniences. It exercises upon the sphincters a local anæsthetic effect so powerful that defecation is sometimes performed unconsciously after its use; it therefore forms an admirable suppository in cases of tenesmus, hemorrhoids, etc. Moûtre's formula is—iodoform, powdered,  $\mathfrak{r.}\ \text{xx.}$ ; cocoa butter, 3 j.; melt and mix for six suppositories. For frictions the ointment is used in the strength of 3 j. to the ounce of simple ointment.

**On the Use of Santonine in Diseases of the Eye.**—Dr. D. Dyce Brown, of the Aberdeen Dispensary, having given a blind man, who suffered from worms, santonine, was surprised at the subsequent improvement of sight. When the patient first came to the Dispensary he could barely distinguish light, and subsequently ophthalmoscopic examination showed that the right optic tract was completely atrophied, and the left not so completely; with the latter eye only could he perceive light. The sight improved so much that he could distinguish a passer-by sufficiently to say whether it was a man or woman. At Dr. Brown's suggestion, Dr. Ogston made trial of santonine, with the following result:—

	Cases treated.	Cured or improved.	Failures or unknown results.
Nervous deficiency.....	85	26	9
Cataract .....	4	1	3

—*British and Foreign Medico-Chirurgical Rev.*, April, 1871.

**Digitalis Externally Applied.**—Dr. E. F. Fanell describes a case of a gentleman suffering from renal dropsy, to whom he had applied in the evening one ounce of the tincture of digitalis sprinkled over a large piece of spongio-pileine wrung out of hot water. In the night the patient was seized with violent vomiting and occasional syncope, and early in the morning was pulseless and intensely prostrated. Under the free use of brandy he rapidly rallied. The kidneys were not affected.—*Brit. Med. Journ.*, March 11, 1871.

In a paper read before the London Clinical Society, April 14, Dr. Royston Fairbank commends the local application of digitalis to inflamed parts, as joints, mammæ, etc. A decoction of the digitalis is first made, of the strength of a teaspoonful of the dried leaves to a half pint of water. Then flannels, wrung out in this, are to be kept constantly applied to the inflamed part.

**Electrical Treatment of Constipation.**—Prof. Benedikt recommends the use of primary induced electricity in constipation, one theophone to be placed in the lumbar region, the other at numerous points on the abdominal wall. The abdominal pole must be pushed hard down upon the abdominal wall, and a very strong current be used. Prof. B. thinks the treatment is of especial value in cases of obstinate chronic constipation in which there is a tendency to hypochondriasis. He relates the case of an officer who had been severely wounded eight months before coming under treatment, during which time he had not had a stool save by the use of medicines; but in whom the electrical excitation always produced a natural evacuation. Three weeks of daily treatment served to cure the case. Prof. Benedikt states that in numerous cases of constipation occurring in spinal and cerebral disease, he has derived great benefit from the method described.—*Allgem. Wiener Mediz. Ztg.*

**Punctures in Anasarca.**—In a paper read before the Clinical Society of London, it was recommended to make a single puncture in the calves of both legs in anasarca with a fine trocar, and withdrawing the stiletto, to leave the canula open for several hours, during which the patient must be kept in a sitting posture. In this way there was drawn off, in two operations, from a man, one hundred and ninety measured ounces of fluid, besides a great deal which oozed out the opening for several days afterwards. Dr. Hilton Fagge, in the discussion following, stated that multiple punctures were largely used at Guy's Hospital with the same object, and that it is important to grease well the neighboring parts, so as to prevent contact between the exhalation and the skin.—*London Lancet.*

**Injection of Perchloride of Iron into Uterus.**—In the *Medical Times and Gazette* of February 11, Dr. Matthews Duncan reports two cases in profuse menorrhagia, dependent upon uterine fibrous tumor, were cured by the injection of perchloride of iron. His methods of procedure are as follows: After the length and direction of the uterus have been ascertained by the ordinary sound, a hollow one is passed into the organ. A syringe, composed of vulcanite, containing about a drachm of the liquor of ferri perchloridi, is fitted closely into the orifice at the proximal end of the probe, and its contents are gently thrown into the womb. No pain is generally felt as a result of this injection, but a feeling of burning is sometimes complained of, which Dr. Duncan is inclined to attribute to escape of some of the fluid into the vagina. Dr. D. has treated a large number of cases, some of them most serious, in this way with great success.

**On a very Efficient Method of Disinfecting Wounds.—**

At the meeting of the Chemical Society of Frankfort, December, 1870, Prof. Boettger suggested the dressing of foul wounds with gun-cotton which had previously been soaked in a strong solution of permanganate of potash. Acting on this suggestion, a soldier in a very crowded hospital, suffering from a wound in the chest which emitted a horrible stench, had such pieces of cotton placed as a dressing on the wound; in a very little while the fetor had entirely subsided. Further trials confirmed the good effects of the treatment. Gun-cotton is useful in this connection because, like cotton, it serves as a strainer to the air, taking out any germs it may contain, and at the same time, unlike most cotton and other organic materials, it does not decompose the permanganate. Dr. Fresenius also recommends that in cases of tuberculosis with foul breath, the impregnated gun-cotton be placed in an aspirateur and the air be drawn through this.—*Buchner's Neues Repertorium für Pharmacie*, 1871, p. 110.

**Antiseptic Treatment of Wounds.—**Mr. C. Macnamara, of

Calcutta, believes that carbolic acid applied freely to wounds acts largely by being absorbed. When it is freely absorbed he thinks the wound suppurates very slightly, and generally heals rapidly, whereas in cases in which no absorption occurs, free suppuration and surgical fever are apt to occur. The test of absorption is its elimination by the urine. To determine its presence in that excretion, twenty drops of nitric acid are added to four ounces of the urine, and the whole boiled or allowed to stand for some time. In either case, if carbolic acid or its derivatives be present, a deep brown color is produced, changeable generally into a yellow by the addition of liquor ammoniæ.—*The Practitioner*, Feb. 1871.

**Chloralum.**—Dr. Edward Ballard, Medical Officer of Health for Islington (*Chemical News*, January 20, 1871), protests against the assertion made by Professor Gamgee, that carbolic acid, owing to its smell, is less used than it would be if without odor, and recommends caution in accepting chloralum as a disinfectant. In his own experience he has found carbolic acid “a most efficient agent for destroying contagia,” and that its odor is not offensive unless contaminated with sulphide of ammonium.

He objects to the inference that because chloralum is *antiseptic* it is also *disinfectant*, and to Professor Gamgee's assuming its disinfecting power from its chemical properties as an antiseptic. A disinfectant, he says, is an agent which will destroy the vitality—the power

of growth and reproduction—of most minute particles of matter which, given off by the sick, are capable of producing a like disease in the healthy. He thinks that to prove that any substance is a disinfectant, it should be shown by experiment, by an accomplished microscopist, to have the power of destroying the vital manifestations of those minute amœbiform particles of matter which constitute the simplest form of living things, and, by repeated experiment upon a large scale, that the reputed use of the disinfectant has actually resulted in the arrest of the spread of contagious disease. He is of opinion that Prof. Gamgee has advanced nothing to satisfy any one that chloralum, used in any way, is capable of destroying the peculiar manifestations of a morbid contagion, and thinks that the reason for its rapid strides into the favor of medical men (who are apt to take up new disinfectants in a "wild manner") may be found in that freedom from odor which Prof. Gamgee considers the basis on which the reputation of Condy's fluids rests.

Dr. Ballard gives as a reason for not having tried chloralum himself, though small-pox and scarlet fever are raging in his district, that he dare not assume the responsibility of its use until *primâ facie* proof at least is afforded him that by using it he will be using that which is capable of destroying "disease-germs."

In the same journal (January 27, 1871), Prof. Gamgee expresses his high appreciation of the value of the suggestions made by Dr. Ballard with regard to means for investigating and proving the mode of action of substances offered as disinfectants, but thinks that little would be learned experimentally about any of them if all persons who, like Dr. Ballard, have abundant opportunity of testing the matter, waited instead of acting.

He states that chloralum shrivels, arrests the movements of, and kills the amœbiform bodies referred to,—and does more, it destroys many of the lower forms of parasitic life, whether animal or vegetable. He is convinced that every good antiseptic is really a destroyer of disease. He adds that the properties of chloralum are almost identical with the active antiseptic and disinfectant properties of hydrochloric acid.

**Cranial Neuralgia Relieved by Gelseminum.**—Dr. Philip C. Williams states, that in supra-orbital neuralgia, not malarial or dependent upon organic disease, the yellow jessamine affords the utmost relief. He is himself subject to violent attacks, which are always controlled by this remedy, all others having failed, and he has confirmed this experience on a great many others. In neuralgia of the scalp it has the same happy effects; in maxillary and spinal neuralgias it has failed. One dose of 30 to 40 drops of the tincture usually suffices. Sometimes it is repeated after an hour, and then 20 to 30 drop doses every

four hours, continued some days, will prevent recurrence.—*Baltimore Medical Journal*.

**A Speedy Cure for Rheumatism.**—Dr. R. H. Boyd states that he cures inflammatory rheumatism in from three to seven days by the following method: He gives first a full emetic dose of ant. et potass. tart., and when this has operated, five drops of tinct. opii and five drops tinct. colchici every three or four hours, and a teaspoonful of a half-pint mixture, containing 3 iv. potass. acet. every hour. When the patient becomes very hungry, and is quite free from pain, having fasted several days, he allows two tablespoonfuls of milk or one oyster three times a day, increasing the quantity gradually each day.—*Michigan University Medical Jour.*, May, 1871.

**Darkness in Treatment of Small-Pox.**—Mr. J. H. Waters states, that if a patient, in the beginning of the attack, be put in a room from which absolutely all light is excluded save that of a candle, the effect is to arrest the disease in the papular or vesicular stage; it never becomes purulent, and the skin between the vesicles is never inflamed or swollen; the liquor sanguinis is prevented from becoming pus; the large scabs of matter never form over the face; there is no intense pain, and only trifling itching, and the smell is either very slight or altogether wanting.—*London Lancet*.

**On Drainage Tube in Purulent Abdominal Effusion.**—Dr. Jas. Risdon Bennett details a case of peritonitis following a kick, in which repeated tapplings were employed for the evacuation of pus, and finally a drainage-tube was inserted into the abdomen and allowed to remain. The patient finally left the hospital "feeling in all respects well, but still wearing the tube, as there was sufficient discharge to make it imprudent to allow the opening to close."—*Practitioner*, 1871.

**Method of Purifying Drinking Water.**—Dissolve in eight quarts of water a half-drachm of crystallized soda, and in a pint of water a drachm of crystallized alum; then pour the latter into the water containing the organic matter, mix the whole, and allow it to stand until the water has become perfectly pure—from six to ten hours. Then pour the clear water off carefully. If in a hurry, the water can be filtered at once through charcoal, sand, or clay.—*Oestr. Zeitschr. für pract. Heilkunde*.

**Bloodletting.**—In *Richmond and Louisville Medical Journal* for 1871, Dr. Whitehead gives his experience in Sebastopol during the Crimean war as very favorable to the use of venesection in severe chest wounds with imminent suffocation. The latter was very often relieved

at once, even when most threatening; but as no opportunity was afforded of following the cases long, the ultimate effect of the bleeding could not be traced.

**Prevention of Pitting in Small-Pox.**—The *Melia Azidavacita* L. of India is used in that country by the natives to cover the bodies of patients recovering from small-pox, it being believed to prevent the marks becoming permanent. Dr. Wight says of it: The leaves beaten into a pulp and externally applied act like a charm in removing the most intractable form of psora and other pustules of an eruptive nature.

**Preservation of Vaccine Crusts.**—Dr. David Stewart states that vaccine crusts may readily be preserved through the whole summer by immersing them in mercury, and putting them in a cool place like a cellar. This is best done by attaching the crust to a piece of cork by means of beeswax, forcing this into the bottom of a test tube, and then pouring on some three inches of mercury.—*British Medical Journal*.

**Iodide of Potassium in Bright's Disease.**—Prof. Cryni, of Brussels (*Brit. Med. Journ.*, from *Wiener Med. Wochenschrift*), strongly recommends this salt, in large doses, in the second stages of Bright's disease. Favorable results by this treatment are also said to have been obtained by Drs. Baudon and Semmala, of Naples, and Dr. Caspari, of Meiningen.

**Carbolic Acid in Poisoned Arrow Wounds.**—In *Medical Times and Gazette* Dr. P. O'Connell Doyle states that in experiments made with poisoned arrows in the Niger country upon fowls, he has found the local free use of carbolic acid to be of great service.

**Iodide of Potassium in Asthma.**—Dr. G. Urbee of Kiel states that he has found iodide of potassium of great use, exhibited by itself in asthma, confirming the statements of Hyde Salter, that about one-fifth of such cases are benefited by its use.—*Deutsches Archiv. für Klinische Medicin*.

**Dilution of Vaccine Lymph.**—Mr. Stephen Mackenzie has found lymph diluted with glycerine as effective as the pure article. Forty drops of pure glycerine were added to contents of two capillary vaccine tubes on a piece of glass, and the whole thoroughly mixed. With this, eleven patients were vaccinated.—*London Lancet*.

**Gallic Acid in Albuminuria.**—Dr. H. C. Wood reports a case of supposed amyloid disease of the kidney, in which, under free use of gallic acid, the albumen disappeared entirely from urine.—*Philadelphia Medical Times*.

**Purpuric Spots produced by Iodide of Ammonium and Potassium, but not by Iodide of Sodium.**—Dr. Sidney Ringer details in the *Practitioner*, for March, 1872, a case in which the administration of iodide of potassium or of ammonium would cause an eruption of numerous spots, varying from the size of a pin's head to that of a pea.

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**Official (Prussian) Method of Preparing Glycerine Lymph.**  
—First open the vesicle of a healthy and vigorous vaccine pock, so as to allow the lymph to flow out freely. This is best done by piercing the vesicle to its very bottom with a sharp vaccinating needle. After a minute or two the escaped lymph is to be taken up repeatedly on a broad flat lancet, and its flow is to be encouraged by pressing the vesicle with some force with the flat side of the lancet. The lymph as taken up is to be placed in a clean watch-glass, and at last chemically pure glycerine and distilled water added, so that the proportion shall be one part of lymph and two parts each of the glycerine and the water. If immediate vaccination is to be practised, the point of the vaccinating needle or lancet is to be well coated with the mixture. If the lymph is to be preserved, it is to be placed in minute bottles containing 30 to 50 grains, in which, instead of in the watch-glass, it may be well sometimes to place it first, and add the ingredients and mix.—*Journal für Kinder-Krankheiten*, April, 1871.

**On the Treatment of Pneumonia.**—By Dr. L. v. Schrötter. [*Centr. f. d. Med. Wiss.*, 3, '71; from *Allg. Wien. Med. Zeit.*, '71, No. 52.]  
—The author studied the influence of various drugs upon the course of pneumonia in a large number of patients. For the purpose of comparison, 77 cases were treated expectant ("indifferent"); in these the author not unfrequently observed an intermittent type during the period of defervescence. The temperature was measured four to five times in twenty-four hours.

*Digitalis* (20–30 grains), in 22 cases so treated, had no perceptible influence upon the purgation, acme, or decrease of the fever, or upon the extent of the infiltration; only the frequency of the pulse diminished more rapidly than the temperature.

American *Tinct. veratri viridis* was exhibited in a series of cases, 2 drops every hour; the total amount taken varied from 8 to 200 drops, on the average from 30 to 40. In these cases the temperature showed remarkably frequent intermissions in its course, some of which must undoubtedly be ascribed to the drug. The stage of acme seemed a day shorter than under expectative treatment, lasting from two to



three instead of from three to four days. The absolute height of temperature reached was not lower. An influence upon the pulse was manifested only by a somewhat resilient condition of it. The extent of the infiltration, as well as the subjective complaints, did not seem to be diminished.

*Tartar-emetica* was employed in 20 cases, from 3 to 9 grains in all; commencing with two grains at once, and then  $\frac{1}{2}$  grain every quarter of an hour. Here also the stage of acme seemed a little shorter (often only two days), and considerable intermissions of temperature of long duration occurred, especially after the vomiting. An influence upon the local process could not be observed.

*Bisulphate of quinia* was given in doses of 5 grains (100–120 per day). Here again the temperature only seemed to be influenced, the absolute heights being commonly not great, and the stage of acme appearing to be shorter. The number of cases so treated, however, is small.—*St. Louis Medical and Surgical Journal*.

**Exhibition of Iodine.**—The following account of a discussion at the meeting of the St. Catharine's Society for Mutual Improvement is taken from *The Canada Lancet* for August, 1871:—

Dr. Goodman spoke in favor of the use of iodide of calcium as a remarkably mild and efficient alterative; it appeared to him to be more easily assimilated in disordered states of the stomach than any other iodide; he had used it lately with marked effect in diseases of the stomach and bowels in the strumous diathesis; he had not tried it in secondary and tertiary syphilis, but he would here allude to the great benefit derived from very large doses of the iodide of potassium at the General and Marine Hospital in several rebellious cases of those diseases.

The exhibition of iodine combined with albumen, and added to milk or to other compatible articles of food, proved useful in the treatment of scrofula.

In the same way impregnating plants, such as water-cress, with this element, and eating it, had been found by a gentleman present an excellent mode of producing the physiological action of this medicine, as well as combining iodide of sodium with the salt used as a condiment.

Iodide of starch mixed with sugar will be readily used as a sweet-meat by children. Iodine introduced in this way with an aliment acted more beneficially in the scrofulous diathesis where constitutional influences of a profound nature were sought to be brought about.

**Carbon Bisulphide, Rhigolene, and Oleum Menthae Piperitæ as Local Anæsthetics.**—Dr. S. R. NISSLEY, of Ohio, says: I have been in the habit of using the bisulphide of carbon as a local anæ-

thetic for several years. I have tested its efficacy and potency in facial neuralgia, hemicrania, odontalgia, and lumbago, and the speedy relief it afforded to the sufferer was almost instantaneous. My mode of application was this:—Place a pledget of cotton into a wide-mouthed bottle, saturate it well with the bisulphide, and apply it to the painful part, and as soon as the patient complains of smarting sensation, change the bottle, carefully following the course of the principal nerve that seems to be involved in the difficulty. I have used a combination of rhigolene and the oil of peppermint as a local anæsthetic in a number of neuralgia cases that presented themselves at my office for relief, and thus far my success in those cases has been far beyond my most sanguine expectations. After several applications they express themselves cured. I have recently been in the habit of adding an ethereal collodion to the compound, and I am gratified to say that in the combination I have a specific which will, under almost any circumstance, when the part is accessible, relieve the patient instantaneously; its effects are magical.—*Journal of Materia Medica.*

[In my hands the bisulphide has failed in facial neuralgia as a local anæsthetic, producing so much pain that patients refuse it a fair trial.—ED. NEW REMEDIES.]

**A New Method of Treatment of Epididymitis.**—The late Dr. Thomas F. Whitney, of this city, devised the following plan for the reduction of swelling in epididymitis by equable compression, but died before he could communicate it to the profession:—

A sheet of thin india-rubber one foot square.

A piece of tape long enough to hold the testicle in position.

A Davidson's syringe.

Place the lower extremity of the testicle at a point in the rubber equidistant from the four corners; then, enveloping the testicle in the rubber, tie above its upper extremity, reflect the rubber, bringing its four corners together. The nozzle of the syringe should then be inserted within the folds of rubber and firmly tied. By this means, a double envelope will be formed about the testicle, similar to the manner in which the pleura encloses the lung. By exerting intermittent pressure of the hand upon the bulb of the syringe, air will be forced into the sheet-sac, thereby producing a uniform pressure over the whole surface of the enlarged testicle, which pressure may be controlled at the will of the operator and graduated to the condition of the organ.

**Medical Uses of Carbolic Acid.**—Dr. N. S. Davis, of Chicago, Ill. (*Chicago Med. Examiner*), in his "Report on the Medical Uses of Carbolic Acid" to the Illinois State Medical Society, refers to two cases of cancerous disease and ulceration of the os and neck of the

uterus, which were much relieved by using the solution of carbolic acid internally, at each meal-time, and a stronger solution twice a day as a vaginal wash. The patients were kept comparatively comfortable for many months, but the effects were only palliative. A neighboring physician informed him that he had a case of cancerous disease of well-marked character, that had been kept stationary and the patient comfortable more than twelve months, under the constant use of carbolic acid. Dr. Davis has also used it with temporary benefit in two cases of cancerous disease of the stomach. He does not regard carbolic acid as a specific for the cure of any form of disease, but from its mildly sedative influence on the organic nervous system and mucous surfaces, coupled with strong antiseptic properties, it is admirably adapted to meet certain indications that arise during the progress of a great variety of diseases.

**Treatment of Peritonitis.**—Dr. Whitelaw commends the treatment of acute peritonitis by absolute quiet on the back, in a cool, well-ventilated room, 60° F., with a diet restricted to a little milk and lime-water, thin arrow-root, and tablespoonful doses of cold water, external applications, and the exhibition of a teaspoonful of the following mixture every fifth hour, if pain be present:—

R Tinct. belladonnæ,  
Sol. mur. morphiæ..... ss 3 ij.  
Aquæ ..... ad 3 ij.

Sometimes for this he substitutes laudanum. His external applications are made in the following way:—A pailful of hot water is placed by the bed, and out of it a triple ply of flannel is wrung, laid on the abdomen, and entirely covered with a piece of silk oil-cloth, a four-legged stool or hoop, or other contrivance keeping off the bed-clothes. As soon as the application becomes too cool to be agreeable to the patient, a fresh one is applied.—*Glasgow Medical Journal*, May, 1871.

**Chloral in Delirium Tremens.**—In the *Centralblatt für die Med. Wissen.*, Dr. Curschmann relates some experiments in the treatment of delirium tremens by chloral-hydrate. There were twenty-four males thus treated, from the age of twenty-four to fifty. Two cases were complicated by pneumonia, four with surgical diseases, and the rest without complication. All were treated by chloral-hydrate in wine, and in two instances by subcutaneous injection, which is not to be recommended. Clysters cannot be used in D. T. The dose given was 3 to 4 grammes—one drachm at first, afterwards more. The smallest quantity which caused sleep was 5 grammes, but one patient had as much as 25 grammes in 22 hours. The remedy was more successful in beer-drinkers than in spirit-drinkers. The pulse and respiration

frequently sank soon after the administration of the drug. The duration of the sleep was 8 to 21 hours, and the patients awoke cured. He considers that the cure by chloral is much more rapid in D. T. than when any other remedy is made use of.

**Copaiba in Psoriasis.**—Dr. Purdon says (*Dublin Quarterly Journal*): During the last eight months I have had under treatment, at the Belfast Hospital for Diseases of the Skin, an unusually large number of cases of psoriasis. The opportunity was thus afforded of grouping together a certain number of cases and studying the different effects of certain remedies, as arsenic, carbolic acid, hypophosphite of soda, cod-liver oil, quinine, balsam of copaiba, etc. In some cases local treatment was also employed. Without going into details, I may be permitted to say that the treatment of psoriasis, *when no acute symptoms were present*, by large doses of copaiba balsam, given with a little liquor potassæ, mucilage and water, has been highly gratifying, especially in cases where it produced urticaria—indeed the dose should be increased till the latter is established. I have been able to discharge the patients sooner by the balsam treatment than by any other, nor has any of them as yet had a relapse.

**Typhoid Fever Treated with Strychnia.**—John E. Owen, M.D., Chicago, Ill. (*Chicago Med. Journal*), observes that during the last four years, both in hospital and private practice, milk and the acid and strychnia mixture have been administered to patients with typhoid fever, with success. The mixture is prepared as follows:  $\mathcal{R}$  Acid sulph. arom., 3 iij.; strychniæ sulph., gr.  $\frac{1}{4}$ ; syrup. simpli.,  $\mathfrak{z}$  v. M. Dose—a tablespoonful. There is one noticeable feature in cases treated by strychnia, viz., the dry brown tongue soon becomes moist, and remains so during the treatment; this is effected, he believes, mainly through the agency of strychnia, by increasing the nutritive and assimilative functions of the system.

**Pemphigus produced by Iodide of Potassium.**—In the *American Journal of Medical Sciences*, July, 1871, Dr. F. J. Bumstead details a case in which the free use of the iodide of potassium gave rise to a severe eruption of bullæ. The drug was given a number of times, and its administration for a few days was always followed by the skin disease. Dr. B. states that he has searched in vain for any account of such eruption being produced by iodide of potassium, in most of the works upon the subject within his reach. The only allusion he has seen is by Boinet (*Iodothérapie*), who states that Cazenave has seen the iodide cause eruptions of bullæ filled with sero-sanguinolent fluid, which are readily torn, and which may be followed by ulcers difficult to heal.

**Sciatica Cured by Hydropathic Treatment.**—Dr. P. A. La-grelette details a case of sciatica of two and a half months' duration, with wasting of the limb, which had resisted all sorts of treatment, but was cured by the following means:—On the 30th of December the man was placed in an empty bath-tub, and frictions with cold water were applied to his whole body, and especially along the track of the sciatic nerve. These frictions were repeated twice daily. The amelioration was immediate. By the 3d of January the pain had gone; by the 25th the frictions were left off as not necessary. No relapse has followed this case.—*Journal de Médecine et Chirurgie Pratique*.

**Belladonna in Typhoid Fever.**—Dr. Lewis S. Pilcher, Passed Asst. Surgeon U. S. N. (*Mich. Univ. Med. Journal*), having been attracted by the positive and warm terms in which the effects of belladonna, given in typhoid fever, are stated by Dr. B. Kelly, of Dublin, finds that under its influence, within from 24 to 48 hours after the first administration of the drug, delirium, coma, and subsultus quickly vanish, and are succeeded by calmness and clearness of the intellect, by natural sleep, and complete control of all the voluntary muscles; diarrhoea is checked, and healthy consistent evacuations are established.

**Idiosyncrasy to Iodide of Potassium.**—In the *Medical Times* of August 1, Dr. Jas. D. McGaughy details a case in which the exhibition of iodide of potassium produced profuse salivation, with swelling of the neck and loss of articulation, followed by delirium. The symptoms were produced several times, until the doctor, becoming convinced that it was the iodide, stopped the further exhibition of it. He states as his opinion that a dose of 30 or 40 grains would be a fatal one to the patient.

**On the Use of Carbolic Acid to prevent Pitting of Small-Pox.**—In the *Edinburgh Medical Journal*, Dr. W. Scott states he has been very successful in preventing disfigurement by small-pox by keeping the face, from the first appearance of the eruption, constantly moist with a solution of carbolic acid in oil (1 to 8). The application is very grateful to the patient, allaying the itching, and irritation, and preventing the desire to scratch off the scabs.

**Suppurating Scrofulous Abscess of the Neck Treated by Drainage.**—In the Out-door Department of the Middlesex Hospital, London, Dr. Jno. Murray, instead of making an incision into suppurating cervical glands, introduces a catgut ligature into the abscess and allows the contents to drain away. Upon recovery no scar remains.

**Treatment of Tic-Douloureux.**—Prof. Benedikt recommends the galvanic treatment very highly in neuralgia of the trigeminus. The current must be directed partly longitudinally and partly diagonally through the head, and also the sympathetic must be galvanized. In recent cases one or two sittings are sufficient, in other cases many are required.—*Oesterr. Zeitschrift f. prakt. Heilk.*, 10, 1871.

**Influence of Alcohol on the Sight.**—M. Galezowski recently, at a sitting of the Paris Academy of Medicine, pointed out how many cases he had seen among the poorer classes recently, of loss of vision from chronic use of alcohol. The form of loss of sight is that of amblyopia. He also mentions that intemperate persons do not do well when operated on for diseases of the eye.

**Ether Spray to Spine in Chorea.**—Dr. John Rose reports the case of an anæmic girl, aged thirteen years, who had chorea following rheumatism, who was successfully treated by ether spray applied along the spine for four or five minutes each time; and after fifteen sittings, a very marked improvement took place, followed by complete recovery.—*Medical News*.

**Carbolated Cerate Dressing in Varicose Ulcer of Leg.**—Prof. Andrews, of Chicago, Ill. (*Chicago Med. Examiner*), recently had an obstinate case of varicose ulcer of the leg of fifteen years' standing, which was cured by the injection of tinct. ferri muriat. into the varicose veins, and a dressing of an antiseptic ointment, composed of carbolic acid cryst. 18 grs., adipis 3 i.

**Sulphate of Nickel in Neuralgia.**—A case of obstinate neuralgia is related which was cured by sulphate of nickel, in doses of half a grain three times a day. At the end of one week one grain was given. Its sedative action was speedily manifested in reducing the pulse and procuring sleep; all symptoms of the paroxysm disappeared.—*Oregon Medical and Surgical Repertory*.

**Remedies for Chafing.**—A mixture of powdered steatite (soapstone) two parts, and hyd. chlor. mitis one part, is the most elegant and effective dry application to the chafed skin of infants. Dry hyd. chlor. mitis, applied once or twice a day to tumid and tender hemorrhoids situated about the anus, rarely fails to cure them in a few days.—*Dr. A. S. Hudson, in the Pacific Med. and Surg. Journal*.

**Ashantee Bark in Chronic Dysentery.**—Dr. C. Handfield Jones details a case (*British Medical Journal*) in which the ashantee bark seemed of great service in a case of obstinate chronic dysentery, in the dose of half a fluid drachm of tincture three times a day. He states that although the bark contains a large amount of tannic acid, its action is very different from that of that principle.

## WASP-STINGS.

DR. DERRY commends (*British Med. Journ.*, Sept. 23, 1871) the following treatment in cases of illness produced by the stings of wasps:—

A careful examination of the wound should be made with a good pocket lens; and any remnant of the sting removed with a pair of fine-pointed forceps. Laudanum should be applied by means of a cotton-wool swab for at least ten minutes, followed by warm water fomentations. Internally, brandy and hot water should be given at once, and twenty minims of aromatic spirit of ammonia every half hour as long as there is depression. If the mouth or throat be stung, warm flannels should be applied to the neck, and warm inhalations with ether employed. There is sure to be spasm of the rima glottidis in these cases. In no case that I have seen yet would I have given opium internally; I doubt anything but mischief from its use in any of these cases, but I am aware it has been recommended by medical writers. If local pain be not subdued by the application of the laudanum, then I think I would try the effect of hyoscyamus poultice or tincture of belladonna sprinkled over a warm damp flannel, and applied to the wound.

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**Glycerized Cotton for Dressing Wounds.**—Professor Gubler, at a recent meeting of the Académie de Médecine, exhibited some specimens of wadding prepared by saturating it with a certain quantity of glycerine, which he had found to render it permeable to all medicinal liquids, without causing it to lose any of its suppleness and lightness. He suggested that in this state it might prove a useful substitute for charpie, in the event of a scarcity of that article. Dr. Delaborde has already employed it with advantage. In order to prepare this dressing it is only necessary to pour a small quantity of glycerine over the square sheet of wadding, and afterwards express it as strongly as possible.—*Journal de Pharmacie et de Chimie.*

**Treatment of Malignant Small-Pox by Sulphur Fumigation and Sulphurous Acid.**—In the *Boston Medical and Surgical Journal* of Nov. 2, Dr. F. Hjalteim, of Iceland, details his successful efforts in stamping out a commencing epidemic of malignant small-pox and of curing those already sick by free fumigations of burning sulphur and the sulphurous acid water internally.

**Abortive Treatment of Felons.**—A correspondent of the *Boston Journal of Chemistry* writes that it is well known by physicians that pressure causes absorption; and in view of this fact, ten years ago he adopted the plan of applying several coatings of collodion over the finger or place where the pain is felt on its first appearance. On dry-

ing, the collodion contracts with an even pressure, and if kept on for twenty-four hours, the symptoms will usually entirely disappear.

Of late he has been in the habit of soaking the affected part in quite a strong solution of carbolic acid for a few minutes before applying the collodion. The pain for some hours will be quite severe, but an anodyne will afford relief.—*Med. Record.*

**Treatment of the Last Stage of Cholera.**—Professor Filippo Pacini, of Florence, in a little pamphlet just published, *Sull ultimo Stadio del Cholera*, is of the opinion that in the stage of apparent death which closes the scene in that disease, the only available means at hand for resuscitation is the injection of salt water into the veins. The places of election for this delicate operation he lays down as the cephalic, brachial, or external jugular veins, and his mixture is 10 grammes of fine salt to one kilogramme of water. He uses at one time 200 grammes of this solution at a temperature of 40° centigrade. After one kilogramme has been injected without effect, he regards the case as hopeless.—*Medical and Surgical Reporter.*

**Chloral in Cholera.**—During the epidemic which has recently prevailed at Riga, Dr. von Reichard has had recourse to chloral, administering it according to the following indications: “1. To relieve the cramps at the commencement. 2. To assuage the præcordial suffering which is so distressing during the latter stages. 3. To arrest vomiting. 4. To procure the sleep so urgently demanded by the patients. Not only were these indications fulfilled, but the success obtained from the medicine surpassed all expectation. In one case in which the ordinary treatment had been pursued, and the patient seemed as if he had only a few hours to live, a drachm of chloral was given him in four times the quantity of water, so that a strong sense of burning was felt while swallowing it. In two minutes sleep had commenced, and, troubled at first, it became calm and lasted three hours. Respiration became easier, the warmth and turgescence of the surface reappeared, the cholera *facies* disappeared, and the pulse diminished from 130 to 90. The vomiting and stools ceased, and, in fact, a true resurrection was effected, the patient rapidly recovering. M. Blumenthal, also of Riga, has used it in two bad cases successfully, in doses of a drachm repeated two or three times in the hour.—*Medical and Surgical Reporter.*

**Bromide of Potassium in Urethral Fever.**—Dr. I. T. Rothrock details a case in which use of a catheter was followed by severe fever several times, and in which thirty grains of the bromide, given just after the use of the instrument, sufficed to prevent the constitutional disturbance.—*Philadelphia Medical Times*, Dec. 1, 1871.



**Strychnia in Albuminuria.**—Brignoli, in *Lo Sperimentale*, besides recommending nux vomica in various neuroses, gastralgia, dyspepsia, cardiac palpitations, periodic cough, &c., states that he has observed it to have a marked effect in retarding the progress of albuminuria, especially the scarlatinal form with anasarca. He cites twelve cases of complete recovery.—*British Med. Journ.*, Oct. 28, 1871.

**Calabar Bean in Tetanus.**—Dr. Franzolini details (*Gaz. Med. Ital. Pro. Ven.*) the case of a patient in his hospital with tetanus, caused by the penetration of a splinter of wood into her left foot. After removing the fragment from the foot on the 16th of July, Dr. Franzolini made an injection of tincture of Calabar bean in the nape of the neck. The pulse was 84, temperature 38.8, and respirations 22. On the 18th July, pulse 96, temperature 38.5, respirations 28. The injections were continued, thirty drops being injected—every twelve drops containing five centigrammes of the bean. In the first twenty-four hours 130 drops of the simple tincture of the Calabar bean were injected. The patient succumbed.—*The Doctor*, October 1st, 1871.

In the *Philadelphia Medical Times* of Dec. 15, is reported a fatal case of traumatic tetanus which was treated with Calabar bean.

**Cundurango.**—According to the *London Lancet* (Oct. 28, 1871), a trial of this drug in the Middlesex Hospital, London, has shown it to be worthless in the treatment of cancer. A testimony which is abundantly confirmed on all sides.

**Chorea.**—We find in the *Aerztliches Literaturblatt* for July 7, M. Wenz treated a girl of 17 years of age, who had not hitherto menstruated, but who had been for several weeks affected with chorea of the right side, by local anæsthetization of the skin over the spinal column. It suspended consciousness, giving rise to a kind of catalepsy. It was repeated for several days, with the result that the chorea was cured. M. Wenz suggests a trial of this plan in tetanus.—*The Doctor*.

**Treatment of Chorea.**—Dr. Wenz, of Dörzbach, reports (*Würtemb. Corr. Bl.*, xlii., 1871) a case of chorea minor, with some manifestations of movements of chorea major, in which, on the twelfth day, treatment by the ether spray on the spine was commenced. At first 30 grammes of ether were used at a time, afterwards 16. Six applications sufficed for the cure of the patient, except some slight indications of choreic movements.—*Schmidt's Jahrbücher*, Sept. 25, 1871.

**Pumpkin Seed as Anthelmintic.**—The anthelmintic value of pumpkin seed appears to have long been known in the East, for, according to the *New York Druggists' Circular*, of August, Dr. Smith used

the following language before the New York Farmers' Club: "In my travels in Syria I found pumpkin seeds almost universally eaten by the people on account of their supposed medical qualities, not because they are diuretic, but as an antidote against animalculæ which infest the bowels. They are sold in the streets, as apples and nuts are here.

**Chloral as an Antiseptic.**—Mr. Stoddart, of Bristol, has recently examined the stomach, lung, heart, kidney, and spleen of a patient who died from an overdose of chloral hydrate. The first thing, he says, that struck me was the very extraordinary way in which the several portions were preserved. Even now, although more than a week has elapsed since death, yet not the slightest sign of decomposition has taken place, nor any unpleasant odor. This, doubtless, is the effect of chloroform in the tissues.—*Med. Press and Circ.*

**Remedy for Poisoning by Rhus Toxicodendron.**—Dr. J. D. Stewart writes to *Boston Journal of Chemistry* as follows: "I send the following, which I have used for more than twenty-five years with great satisfaction. The tormenting burning pain is relieved instantaneously, and the worst cases are cured in one or two days: Bruise slightly a handful of white ash leaves (*Fraxinus acuminata*); add new milk enough to cover; simmer ten minutes, and apply, as hot as can be borne, three times a day." Mr. Harris, in the *Scientific American*, states that he has used locally, with signal success, a wash made from a solution of belladonna, a teaspoonful to a tumblerful of water.

**Creasote in Typhoid Fever.**—In the *Revue de Thérap. Médico-Chirurg.*, Sept. 17, is a paper by Dr. G. Morache, in which he strongly commends the use of creasote in typhoid fever. He thinks it acts locally on the digestive tract, modifying very favorably the character of the discharges, and at the same time lessens the temperature of the patient. He gives it in doses of 4 to 8 drops, and at the same time an injection of 4 to 7 drops. Dr. M. thinks also that creasote acts specifically by arresting fermentation, but at the same time distinctly states that the use of phenic acid has not given as good results.

**Calabar Bean in Tetanus.**—In the Indian *Medical Gazette* of June 1, Mr. C. Macnamara reports a case of traumatic tetanus, in which recovery took place under the administration of Calabar bean.

**Treatment of Locomotor Ataxia by Electricity.**—In the *Revue de Thérap. Médico-Chirurg.* for October, 1871, Dr. Paul Spillmann details a case of well-advanced locomotor ataxia cured by the continued galvanic current. The descending spinal current was used; that is, the positive electrode was always applied to the upper part of

the spine and the negative to the lower limbs. The strength of the current never exceeded that of more than 20 to 30 elements of Remak.

**Aguomada (Plumeria Lancifolia).**—This plant, a native of Brazil, is much used in Rio Janeiro as an emmenagogue, in doses of one and a half to two drachms of the dried leaves, taken in infusion one, two, or three times a day. Its properties are said to reside in a resin and a bitter extractive. An alcoholic extract is prepared, of which the dose is 0.15 centigrammes. It is also used in leucorrhœa, and when the lochia are irregular after confinement.—*Journal de Méd. de Brussels*.

**Phosphorus as a Remedy in Cataract.**—In the *Revue de Thérap. Medico-Chirurg.* (August and September) Dr. Tavignot has a paper of some length upon the above subject, in which he concludes that it is possible to cure a certain number of cases of cataract, without operation, by the more or less prolonged internal exhibition of phosphorus, and that all cataracts are influenced by it, the gray becoming white, the white milky.

**Anæsthetics.**—For a most elaborate article on recent advancements in anæsthesia, see a paper, too long for abstraction, in *Schmidt's Jahrb.* of Sept. 25, 1871.

**The Origin of Enemata.**—Frederigo Kernot, of Naples, in a newly published *Storia della Farmacia*, describes, "with true Southern liveliness," according to the *Pharmaceutical Journal*, the invention of the enema-apparatus, which he looks upon as an epoch in pharmacy as important as the discovery of America in the history of human civilization. The glory of the invention of this instrument, so beneficial to suffering mankind, belongs to an Italian, Gatenaria, whose name ought to find a modest place together with Columbus, Galileo, Gioja, and other eminent and illustrious Italians. He was a compatriot of Columbus, and professor at Pavia, where he died in 1496, after having spent several years in the perfection of his instrument. The enema-apparatus may be justly named the queen of the world, as it has reigned without a rival for three hundred years over the whole Continent, besides Brazil and America. The enema came into use soon after the invention of the apparatus itself. Bouvard, physician to Louis XIII., applied two hundred and twenty enemata to this monarch in the course of six months. In the first years of Louis XIV. it became the fashion of the day. Ladies took three or four a day to keep a fresh complexion, and the dandies used as many for a white skin. Enemata were perfumed with orange, angelica, bergamot, and roses; and Mr. Kernot exclaims, enthusiastically, "O! se tornasse questa moda!" (Oh that

this fashion would return!) The medical profession at first hailed the invention with delight, but soon found the application *infra dig.*, and handed it over to the pharmacist; but shameful invectives, sarcasms, and epigrams, hurled at those who exercised the humble duty of applying the apparatus, made them at last resign it to barbers and hospital attendants. As a specimen of these epigrams, the author gives the epitaph on the tombstone of an ancient pharmacist:—

“Ci-git qui pour un quart d'écu  
S'agenouillait devant un cu.”

—*British Medical Journal*.

**Extract of Conium in Inflammation of the Breast.**—M. Aldstadter, of Pesth, strongly recommends (*Wiener Med. Presse*, No. 12, 1871) small doses of extract of conium, repeated several times in the course of the day, for the resolution of inflammation of the breast, arising from stasis of the milk in puerperal women, and reports several cases in which striking advantage was obtained from its use. In all instances care should be taken to obtain as pure and active a specimen of the drug as possible.—*The Practitioner*, Aug., 1871.

**Purifying of Hospital Wards.**—M. Rabot states (*L'Union Médicale*, Aug. 20, 1871) that he has succeeded in purifying hospital wards, without disturbing the patients, by the following means: An oxygen-generating apparatus is placed outside the building, and, by means of a long india-rubber tube, a volume of oxygen is introduced, measuring about the thousandth part of the cubic feet of the room, after the ward had, as usual, been well ventilated. To feed the patients' curiosity, a few fumigations with cascarilla were made. In both extremities of the ward large basins containing one pound of peroxide of manganese and ten pounds of the solution of hyperchloride of lime were placed and changed every day. The method has been conscientiously applied by M. Rabot in a hospital at Versailles, with the best results.—*Medical News and Library*.

**Death from Bichloride of Methylene.**—A case of this lately occurred at the Radcliffe Infirmary, Oxford. The patient, a woman, æt. 44, was about to undergo an operation for cancer of the breast. Bichloride of methylene was administered on a flannel rag. After two or three convulsive gasps the patient expired. The quantity administered was small. Artificial respiration was practised, and other means of restoration, but without success.—*British Medical Journal*, Sept. 16, 1871.

**Frozen Beef-Essence.**—Dr. H. B. Hare states (*Phila. Med. Times*, Oct. 16, 1871) that in a case of scarlet-fever in a child, the patient could not be induced to swallow the beef-tea which his condition required. As he took ice with avidity, the father suggested that if the beef-tea were frozen he might then be induced to take it in that form. The suggestion was carried out, and the child took the frozen beef-tea readily. This expedient may in many cases be advantageously resorted to.

**Rash Produced by Quinine.**—At a meeting of the Detroit Academy of Medicine (*Detroit Review of Med. and Pharm.*, Sept., 1871) Dr. Andrews reports several cases in which quinine produced eruptions attended with such intense itching as to preclude its use.

**The Teaspoon as a Measure.**—A writer in the *Canadian Pharmaceutical Journal*, who has examined the subject critically, says that teaspoons have been gradually growing larger of late years, the spoon of the last century having been only about two-thirds of the size of that now in common use. He adds, however, that three sizes are made at the present time—large, medium, and small, containing 95, 85, and 60 minims respectively. Table-spoons, also, have increased, and vary from 4.5 to 6 fluid drachms in capacity. He infers that the dose of certain articles may be unsafe if a teaspoonful or a table-spoonful be ordered, and proposes to abolish the dessert-spoon as a measure, substituting two teaspoonfuls.

**Local Application of the Leaves of Datura Stramonium.**—In the *Revue de Thérapeut. Medico-Chirurg.* for Nov. 15, 1871, Felix Neucourt praises cataplasms made of the leaves of Datura Stramonium as of great service in various inflammations, detailing a number of cases in which he found them very useful. These cases comprised acute intestinal inflammation, acute and chronic phlebitis, phlegmonous, muscular rheumatism, arthritis of the great toe, and inflammation of the vulva. The cataplasm should be applied immediately over the affected part, and be changed about three times a day.

In a case of cardiac dropsy the application of a cataplasm of stramonium to the abdomen produced, after eight hours, diarrhoea and profuse diuresis, with subsequent relief to the anasarca. In inflammatory cases the relief was most marked when the cataplasms were applied early. In no case were symptoms of mydriasis or narcotic intoxication induced.

**Belladonna locally applied in Orchitis and other Inflammations.**—Dr. S. D. Turney, in the *American Practitioner*, states that he has for sixteen years used belladonna as a local application in

orchitis, and that in twenty-four hours there is usually entire relief, and the patient may leave his room, after having applied a suspensory bandage. The same remedy is also very efficacious in inflamed breasts. The formula is as follows :—

Take of Extract of belladonna, one drachm.

Glycerole of starch, one ounce.

Mix and rub thoroughly over the entire scrotum and along the affected cord every three or four hours.

**Gelsemium.**—In the *American Practitioner*, vol. iv., p. 267, Dr. Theo. M. Rafferty recommends tincture of Gelsemium as a most valuable febrifuge, as being very useful in neuralgia, hysteria, nervous headache, and as near a specific for rigidity of the os uteri in labor, and as of great service in puerperal eclampsia.

**Acupuncture in Muscular Paralysis and Pains.**—Dr. Pridgin Teale commends (*Abeille Médicale*) acupuncture in muscular paralysis following luxations from want of use of the part, and also in persistent muscular pains which have resisted other treatment, and are probably due to rheumatic fibrous inflammation. The acupuncture is supposed to relieve by modifying the afflux of blood, and consequently nutrition. The needle must be thrust clear through the tissue to the bone beneath, and allowed to remain one minute. Relief is sometimes immediate.—*Revue de Thérap. Medico-Chir.*, Nov. 1, 1871.

**Tetanus.**—In U. S. A. Circular No. 3, August 17, 1871, several cases of tetanus are reported—one, following gun-shot wound of the hand, treated with opium and chloroform inhalations, terminating fatally. At the autopsy the median nerve was found inflamed for five or six inches. One, very bad, following a severe burn caused by explosion of a magazine. Recovery. Treatment: attention to bowels and most supporting food, with free use of alcohol; bromide of potassium carried to the extent of half an ounce four times a day; grain doses of morphia to procure sleep, and, later in the disease, eight grains of quinine daily.

One case treated with large doses of opium and inhalation of ether. This was very severe. The convulsions followed instantly upon a blow on a very sore bubo, and occurred every five or ten minutes, and were very severe. In ten hours two and a half ounces of laudanum and fourteen ounces of ether were used, and at the end of that period the spasms yielded. Recovery.

**Chloral Hydrate in Cramps.**—In the *Wiener Medizinische Presse*, Nov. 26, 1871, Dr. W. Morgenstern details two cases of severe cramps in the legs, which yielded at once to moderate doses of chloral. One of these cases was in the person of a pregnant woman.

**Paralysis of Ocular Muscles Treated with Calabar Bean.**—Mr. T. Wharton Jones reports, in the December number of *The Practitioner*, two cases of paralysis of ocular muscles, successfully treated by dropping a solution of the extract of calabar bean into the eye.

**The Use of Calabar Bean in Diphtheritic Paralysis of the Accommodation.**—Prof. Manz, of Freiburg, notices that the pupil is generally but little affected in these cases, and finds that oft-repeated weak solutions of Calabar bean (Calabar bean paper) effect more permanently beneficial results than the use of strong ones, and that recovery from the paralysis—which tends naturally to take place—is very much quickened by the use of this remedy.—*Monatsblatt für Augenheilk.*, September, 1870.—*N. Y. Med. Record*.

**Means of Preventing Scars in Variola.**—Dr. Revillont (*Press Méd. Belge*, Sept. 25) says there exists a very certain method of preventing the scars of variola, only it is tedious, and therefore is often neglected. It consists in opening, one after the other, with a needle dipped in a weak solution of nitrate of silver, all the vesicles which we desire to make abortive.—*The Doctor*.

**Ice Poultices.**—**Guaiacum in Dysmenorrhœa.**—Dr. Abbot details a case in which a woman took drachm doses of ammoniated tincture of guaiacum for dysmenorrhœa, as recommended by Dewees, and the flow became painless and alarmingly profuse. Among other remedial measures ice poultices were used. Of these he speaks as follows:—

They are made by covering with pieces of ice of the size of an egg a layer of meal upon a cloth, the whole being covered with another layer of meal, and a cloth over all. The meal absorbs the water from the melting ice, and a moderate sensation of cold is kept up for hours, without the necessity of changing the application. The ice sometimes lasts for four or five hours when applied in this way, and the cold is much less severe than when it is applied directly or enveloped in rubber.—*Boston Med. and Surg. Jour.*

**Ice in Acute Rheumatism.**—Prof. Esmarch, in a communication to the Berlin Medical Society, related instances of the great benefit which he had derived from the continuous application of ice to joints affected with acute rheumatism. The general temperature becomes

lowered, the pain abated, and the course of the disease abbreviated to an extent procurable by no other means. So far from fearing the induction of cerebral affection by repelling the articular inflammation—the *phrenopathia rheumatica* being here, as in typhus, dependent upon the increased temperature—ice is especially indicated for its prevention or removal.—*Medical Times and Gazette*.

**Cabbage-Leaves as a Local Application.**—Dr. Blanc confirms (*Revue de Thérap. Méd.-Chir.*, Jan. 15, 1872) the statement that cabbage-leaves are a valuable local application for rheumatic pain, and also reports cases of foul and erysipelatous ulcers, where the use was attended with the happiest results.

**Injection of Alcohol into Serous Cysts.**—M. Monod (*L'Union Médicale*, October 30, 1871) has called the attention of the Société de Chirurgie to the use of alcohol as an injection in hydrocele, and in other forms of serous accumulation.—*Philad. Med. Times*.

**Cod-Liver Oil in Whooping-Cough.**—J. Prestwick states (*London Lancet*, Dec. 9, 1871) that he has obtained very good results by using cod-liver oil in whooping-cough.

**Lupus Exedens of Twenty Years' Standing Cured by Large Doses of Iodide of Potassium.**—Mr. Gay (*London Lancet*, Dec. 9, 1871) details a case in which the disease had steadily progressed for 20 years, eating away the greater portion of the upper maxilla and the nasal bone and cartilage on the left side. There was no syphilitic basis whatever, but cicatrization commenced in a very short time after the exhibition of half a drachm of the iodide of potassium three times a day, and was nearly completed at time of report.

**Atomized Turpentine-Water in Chronic Bronchitis and Consumption.**—Dr. S. Goodwin, of Victoria, Texas, writes us that he has lately been using turpentine-water, inhaled by means of an atomizer, with signal advantage in cases of chronic bronchitis and consumption, where there was copious expectoration of either mucus or pus, with hemorrhage and violent cough. The turpentine-water is prepared from spirits of turpentine by magnesia, in the same way that aromatic waters are commonly prepared by druggists.—*Medical News*.

**On the Use of Setons in Strumous Diseases.**—Mr. Edward Crossman has a paper upon this subject in *The British Medical* (Dec. 16, 1872). He details some cases in which the setons had very marked effects, and states that he has notes on the use of setons in 35 cases of confirmed phthisis in various stages, in 32 of which very



great benefit was received from their use. In no case were any bad results produced, or the weakness increased by the discharge of the wound, but the expectoration was lessened and the emaciation *part passa* disappeared. The setons in these cases were inserted in the breast. In strumous ophthalmia Mr. Crossman found setons placed in the arm of very great service. He also states that he has obtained very good results from setons in the neck in tubercular meningitis; also from one in the arm, above the clavicle, in glandular swellings in the neck.

**Action of Platinum, Palladium, and Iridium Salts Injected into the Blood.**—In the *Journal of Anatomy and Physiology* for November last, Dr. Blake, of California, has a paper upon this subject. He finds that when small amounts of the substances named are injected in solution into the veins, there is a sudden fall of the arterial pressure, owing, he believes, to complete arrest of the pulmonary circulation, from contraction of the lung capillaries. If in very small quantity they at last pass through the lungs and exert a similar influence on the systemic capillaries, giving rise to increased arterial pressure. If they be injected into an artery, the blood pressure is at once almost doubled. When injected in sufficient quantity into a vein to produce death, the lungs are found excessively *anæmic*. The action is probably a local one exerted directly upon the capillaries, and not through the intervention of the vaso-motor nerves.

**Intestinal Occlusion Produced by the Accumulation of Fæces; Cure by the Employment of Ice, Within and Without.**—Dr. Prunac, Interne of the Hospital of Lyon, reports a cure in the *L'Abeille Médicale*, Dec. 25, 1871, in which, after the failure of senna, croton oil, etc., etc., and the appearance of most alarming symptoms, the woman was treated by the application of ice to the outside and the use of large enemata of ice-water every four hours. The water was retained, and during the following night large quantities of hardened fæces were passed, with great relief to the abdominal pain, distention, and soreness. The next day the pulse was less rapid, the sweats had ceased, there was some diarrhoea, and the abdominal symptoms were better. Through this day the ice was used internally and externally, and seltzer-water was exhibited. She had three diarrhœic stools, one of them bloody. The ice was stopped the next day, and the woman made a rapid recovery.

**Action of Nicotia and of Atropia on the Vagus.**—Schmiedeberg (*Ludwig's Arbeiten*) states that the vagus contains filaments which quicken the heart's action as well as those that slow it. Nicotia paralyzes the latter, atropia the former.—*Journal of Anatomy and Physiology*, November, 1871.

**Action of Curare on Temperature.**—Riegel states that when an animal is poisoned with curare the temperature steadily falls, although artificial respiration be carefully kept up, and the actions of the heart and the functions of the sensory and vaso-motor nerves remain unaffected by the poison. When the animal has previously been rendered feverish by the injection of pus into the veins the temperature was not only reduced to the normal, but even below it.—*Ibid.*

**Popliteal Aneurism Cured by Flexion in Three Days.**—The *Bulletin de l'Académie Royale de Médecine de Belgique* (*British Medical Journal*, December 23) contains an account by Dr. Larondelle of the cure of a popliteal aneurism of the size of an orange. Dr. Larondelle adopted Mr. Ernest Hart's method of forced flexion of the leg upon the thigh. There was œdema of the foot and leg. The bandage employed was applied after the fashion recommended by Mr. Hart in his first paper in the *Medico-Chirurgical Transactions*; and the patient, as in his second published case, was allowed to walk about the room with the help of a crutch. The bandage was solidified by starch. The flexion seems to have been forced a little in excess. At the end of the second day, as the patient was complaining much of the pain, the bandage was removed. A second bandage was applied, and on the third day the tumor was found to be solidified. The cure thus effected was permanent; and the tumor, at the end of five months, was reduced to the dimensions of a small, hard kernel.—*Phila. Medical Times.*

**Lead Poisoning as a Cause of Optic Neuritis.**—Mr. Jonathan Hutchinson narrates five cases of defective vision occurring in patients affected with lead poisoning, in all of whom the presence or previous existence of inflammation of the optic nerve was revealed on ophthalmoscopic examination. Numerous cases of this kind have been recorded in the German medical journals, but this form of amaurosis does not appear to have attracted much attention elsewhere.—*Royal London Ophthalmic Hospital Reports.*—*N. Y. Med. Record.*

**Phosphuretted Oil in the Treatment of Cataract.**—Prof. Gioppi, of Padua, reports six cases of cataract in which he used phosphuretted oil, two being cases of soft, the others of senile cataract. The oil was employed for two weeks, four to six times daily, in the form of drops, in the eye and as an inunction to the circumorbital region, and internally, and no local or general effects were observed to take place, the lens remaining the same.—*Giornale d' Oftalmologia* and *Edinburgh Medical Journal.*—*N. Y. Med. Record.*

## Part 2.

MATERIA MEDICA.

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## PREPARATION OF CHLORAL-HYDRATE, AND TESTS AS TO ITS PURITY.

BY DR. E. JACOBSEN.

ALL the methods that have been published at different times for the preparation of this article can be divided into two classes: those that describe its production directly from alcohol, and those by which anhydrous chloral is obtained, which only yields the hydrate by the addition of one equivalent of water. O. Liebreich, the discoverer of the hypnotic properties of the hydrate, mentions that Liebig's method (passing chlorine gas into absolute alcohol) is greatly preferable to that of Staedeler (action of muriatic acid and binocide of manganese on starch and other carbo-hydrates). Muller and Paul pass well-dried chlorine gas into a long, narrow cylinder filled with absolute alcohol, heating gradually, first to 30° C., then to 60° C. They raise the temperature then for six days, until it reaches 100° C., where the cylinder is kept, and the contents solidify. The mass of crystals is repeatedly melted and recrystallized, and finally distilled. Should the distillate still have an acid reaction, it is distilled once more over chalk. If crystallization fails to set in on account of too much water, the latter distillation is effected over some chloride of calcium, which had been previously dried at 150° C. The passing of chlorine into the mass during the last two days, whereby much of it escapes as such, not only finishes the substitution, but also drives off the hydrochloric acid produced in the process.

J. Thompson passes chlorine gas into absolute alcohol in a similar way, but interrupts, however, the current of gas as soon as the fluid has turned yellow, and no chlorine is any longer absorbed, and boils it afterwards until the hydrochloric acid has been volatilized; chalk is now added, and the whole purified by fractional distillation over chloride of calcium, taking care to obtain only that part of the fluid which distils between 110° C. and 115° C. The part boiling at a lower temperature is once more rectified. A redistillation over chloride of

calcium will always be found necessary. The yield by this method, of chloral-hydrate, is 135 to 140 per cent. of the alcohol employed, the amount of chlorine used being four or five times that of the alcohol.

Roussin cools the alcohol, which has been saturated with chlorine, down to 0° C., presses out the mass of crystals, which he distils over chalk, obtaining thereby a product which boils at 145° C., and differs greatly in other statements from other chemists. Thompson obtained a product boiling at 115° C.; Personne, one boiling between 96° and 98° C.; the latter also proved that Roussin's preparation consisted of or contained chloral-alcoholate; and that he obtained 185 per cent. of the chloral-hydrate by first separating the chloral from the crude product by means of sulphuric acid.

The different results obtained by different chemists in producing chloral-hydrate originate mostly in the different lengths of time they allow chlorine gas to act on the alcohol; an intermediate product, chloral-alcoholate, is formed, which is only converted into chloral by longer-continued action of chlorine gas. The accurate regulation of temperature is, of course, very important as regards the quantity of other products of chloro-substitutions, while the action of the light in the course of the process may seriously impair the quality of the article. Very often has been found in commerce a chloral-hydrate containing more or less of the alcoholate; and as the latter is known to possess its own peculiar action upon the system, the observations of physicians, differing as they have done, find an easy explanation. Both the hydrate and alcoholate of chloral are very similar to each other in taste, odor, and appearance; they may be distinguished, however, by the following reactions: If in a test-tube a little of the hydrate be heated with twice its volume of water, it will dissolve readily; while the alcoholate, under similar conditions, fuses, and upon cooling solidifies again at the bottom of the tube. If the alcoholate is warmed with concentrated sulphuric acid, it turns brown, with separation of chloral, while no change takes place with the latter. The alcoholate, heated with nitric acid of the specific gravity 1.2, will cause copious red fumes to be given off, while there is almost no action upon the hydrate. According to Hagar, small quantities of alcohol may be detected in chloral-hydrate by Lieben's iodoform test.

Of special importance may prove the manufacture of chloroform from chloral-hydrate, as this alone is chemically pure, not being decomposed by sunlight, a reaction that will almost always take place with chloroform that has been prepared in the usual way, and seems to demonstrate that different products of substitution are formed thereby. Some chemical establishments, indeed, employ crude alcohol, containing aldehyde, for the preparation of chloroform; and as Krae

mer and Pinner lately have obtained, by means of alkalis from croton-chloral (prepared by the action of chlorine gas on aldehyde), a body similar to chloroform (allyle chloroform), and remarkable for the ease with which it decomposes, setting free hydrochloric acid, this may be a hardly ever absent impurity of many kinds of chloroform, causing their ready decomposition. The importance of the subject ought certainly to make the chloroform makers careful. An article of absolute purity should be used for medical purposes.—*Chemisch-technisch. Repertor.*

[We will state here that a ready way for testing chloral-hydrate was mentioned in a meeting of the Lyceum of Natural History of New York, by Dr. I. Waly. In treating the hydrate that, by the action of light or moisture, had deteriorated, with sulphide of ammonium, a yellow precipitate was obtained, while the pure article formed under similar condition a reddish-brown liquid. The original articles referred to may be found in the following journals:—

*Liebig* (discoverer)—Ann. Chem. Pharm., vol. i. p. 189.

*Dumas*—Ann. Phys. Chem. [2], vol. 56, p. 123.

*Staedeler*—Ann. Chem. Pharm., vol. 61, p. 101.

*Muller and Paul*—Pharmaceut. Zeitung, 1869, No. 100.

*Personne*—Comptes Rendues, vol. 69, p. 1363.

*Roussin*—Comptes Rendues, vol. 69, p. 1144.]—*New York Druggists' Circular.*

## CHLORAL-HYDRATE, ALCOHOLATE, TESTS.

BY ALFRED H. MASON.

THE alcoholate of chloral, represented by  $C_2Cl_2HO + C_2H_5O$ , also the hydrated alcoholate, is met with in commerce, and is not to be trusted therapeutically. The *hydrate* of chloral is insoluble in cold chloroform, tetrachloride of carbon, turpentine, and bisulphide of carbon; but on the application of heat, solution is effected. The chloral hydrate is, however, freely soluble in cold water, ether (.735), and absolute alcohol (.805). When dissolved by means of heat, on cooling the hydrate separates in crystals generally acicular, but from bisulphide of carbon in prisms. True hydrate of chloral is not acted on by nitrate of silver or by acids.

*Alcoholate* of chloral is perfectly soluble in chloroform, ether, tetrachloride of carbon, absolute alcohol, turpentine, and bisulphide of carbon, and upon heating does not present any change. In cold water alcoholate of chloral is nearly insoluble. If twenty grains of the chloral compound is soluble in thirty minims of cold chloroform, it is not

a hydrate. On the other hand, if the same quantity of chloral compound is insoluble in chloroform, it is a hydrate.

Mr. Mason gives a table of analyses showing that the per cent. of chloroform yielded upon distillation with caustic soda varies very much in different makes, and that the chloral made under the supervision of Liebreich is the best of all.—*Pharmaceutical Transactions*.

Mr. H. H. Paul has examined fourteen samples, said to represent the chief varieties in commerce, with different results from those of Mr. Mason. He finds the per cent. of chloroform much more uniform, the crystals yielding somewhat more than the other forms.

The Editor thinks that chloral is so hygroscopic that its weight, and consequently the per cent. of chloroform yielded, varies with exposure to moist air.—*Ibid*.

By treatment with solution of ammonia, as shown by Mr. Umney, the hydrate of chloral yields 70 per cent., the alcoholate 60 per cent.—*Prof. Attfield*.

Dr. F. Versmann says: A concentrated aqueous solution placed under the air-pump gives rhomboid crystals; ether gives small hard crystals; acetone, fine needles; warm benzole supersaturated, deposits on cooling, also fine needles; whereas benzole evaporating spontaneously forms long crystals, sometimes half an inch long. Bisulphide of carbon, in the same way, yields fine needles or large crystals. A saturated alcoholic solution deposits long feathery crystals. I obtained some one and a half inches long, which proved to be alcoholate. The alcoholate and hydrates may be readily distinguished in the following way: Take a pretty wide beaker glass, six or eight inches high, full of water, drop a few crystals into it; the hydrate sinks down at once, and is almost dissolved before it reaches the bottom. With the alcoholate the larger crystals will only sink to the bottom and lie there for several minutes before they gradually disappear; but small crystals or fragments of crystals will float on the surface of the water, and as soon as they are attacked by the water, the slight current of the saline solution sinking down occasions sufficient disturbance to impart life to the solid particles; they begin to spin round and round, and dart from one side of the beaker to the other, until the very last solid particle has disappeared. This is not only a very pretty and amusing sight, but is really a distinguishing mark between the hydrate and alcoholate.

Dr. Versmann also proposes a new test, which he thinks much better than the ammonia test. He says: I take advantage of the facility with which the chloral-hydrate and the alcoholate are decomposed by strong sulphuric acid with separation of chloral, which in a graduated tube may be read off, and the percentage of hydrate calculated. I take about equal parts by weight, *i. e.*, ten grammes of the

hydrate and from five to six c. c. of  $\text{SO}_2$ . Five parts of hydrate and one part of acid do not separate chloral, even when heated. And again, a great excess of acid does not give a satisfactory result. About equal weights is the most satisfactory proportion. In a graduated tube provided with a well-ground stopper, and graduated into 0.1 c. c. I introduce from five to six c. c. of sulphuric acid, and heat it by water-bath to  $140^\circ \text{F}$ . I then add ten grammes of chloral-hydrate, shake well, so as to cover the hydrate, and put the tube back into hot water. Decomposition is instantaneous, and the two liquids separate very distinctly. The chloral floating at the top may be read off so soon as the liquid has cooled. After an hour or so the two liquids mix and the chloral changes into meta-chloral, a substance having the same chemical composition as chloral, but solid, and absolutely incapable of dissolving in water or alcohol. Determinations with numerous samples, both with the ammonia test and the sulphuric acid test, always gave a somewhat higher result with the last, which is more accurate. For this reason, and because the process is completed in a few minutes, I prefer it to the ammonia test.

The boiling test Dr. Versmann considers of no value.—*Pharm. Trans.*

Mr. C. H. Wood employs with success the following test: A hundred grains of chloral-hydrate are introduced into a four-ounce flask and dissolved in an ounce of water. Thirty grains of dry hydrate of lime are then added, and a cork, furnished with a long piece of glass tube, is fitted to the mouth of the flask. This tube is bent over just above the cork, so as to slant down and form a condenser. It is surrounded with wet blotting paper during the experiment. The extremity of the tube is drawn out and enters a graduate tube, which acts as a receiver. A gentle heat is then applied to the flask, and the chloroform slowly distilled over. After a few minutes the heat is increased, so as to keep the mixture boiling, and continued until about one hundred grain measures have been collected in the receiver. By this means the steam thoroughly displaces and sweeps over the last traces of chloroform. It is only necessary to read off the volume of the chloroform obtained. Before taking the final reading, it is advisable to keep the tube in a vessel of water exactly  $60^\circ \text{F}$ . A few drops of liquor potassæ poured into the tube destroys the meniscus of the chloroform and facilitates reading.

Mr. Wood states, as far as his experience goes, the alcoholate of chloral is not in commerce.—*Pharmaceutical Trans.*

The editors of *The Pharmaceutical Transactions* state they do not think there is any alcoholate on the market, and that the chloral-hydrate is generally of good quality.

## ON THE DISTILLATION AND BOILING-POINT OF GLYCERINE.

BY MR. THOS. BOLAS.

It is well known that when glycerine, subjected to the ordinary atmospheric pressure, is heated so as to cause ebullition, it is more or less rapidly decomposed by repeated distillations. This decomposition may be, however, entirely prevented by a reduction of the pressure in the apparatus employed to 12.5 m. m. The boiling point of glycerine was determined by effecting the distillation in a long-necked flask, having a supplementary neck attached at right angles to the principal one. In the principal neck the thermometer was fixed by the aid of a caoutchouc cork, while the smaller neck was connected in a similar manner with a two-necked receiver. The glycerine, together with a few fragments of tobacco pipe (to prevent bumping), being placed in the retort flask, the receiver was connected with a Sprengel's mercurial pump and manometer, the caoutchouc joints being made with glycerine in the usual way. Unless the glycerine distilled had been dehydrated by previous distillation in a vacuum, the first portion of the distillate consisted principally of water; afterwards, when the glycerine in a pure state came over, the temperature indicated by the thermometer was  $179.5^{\circ}\text{C}$ . At this time the pressure on the liquid was 12.5 m. m., a pressure nearly corresponding to the tension of aqueous vapor at the temperature of the receiver. A determination of the carbon and hydrogen in the glycerine distilled as above was made; the oxidant employed being oxide of copper, followed by oxygen gas (O), 0.4281 gm. Co, and 0.3439 gm.  $\text{H}_2\text{O}$ .

	Theory.		Found.
C.....	30	39.1	38.9
H.....	8	8.7	0.9
O.....	48	52.2	
	92	100	

Under a pressure of 50 m. m. glycerine distills without change at about  $210^{\circ}\text{C}$ . Glycerine, dehydrated by distillation, absorbs water from the atmosphere to the extent of about 50 per cent. of its weight. The amount absorbed is, as might be expected, very variable.—*Chemical*

*Notes*



## TESTS FOR OLIVE OIL.

**M. LUIGI MOSCHINI** states that the method, suggested by some authors, of distinguishing olive oil from other oils by means of sulphuric acid, caustic soda and nitrate of mercury, **can be depended upon only when** the oil is in its natural state, not altered by exposure to sunshine.—*Journal of the Chemical Society.*

## ALOES.

In a paper upon this subject in the *Transactions of the British Pharmaceutical Conference*, Mr. William A. Tilden says that the compound decoction of aloes (Br. Ph.) loses its bitterness on keeping, and also its purgative power. In discussing the reason of this, he first enumerates the reputed constituents of aloes as four in number. 1. Aloetin or aloesin; 2. Aloin; 3. Resin; 4. Aloesic acid.

*Aloetin* is abundant in aloes, and is to be regarded as the product of the alteration of aloin, partly by the action of heat, partly by oxidation by the air. Mr. Tilden believes it to be a mixture of anhydrous aloin, which is capable, in the presence of water, of recovering its crystalline condition, and a *brown oxidized substance* hereafter spoken of.

*Aloin* is most readily prepared by the following process. A bright, odorous, not waxy-looking specimen of Barbadoes aloes is to be dissolved in a quantity (1 lb. to the gallon) of boiling distilled water, to which a few drops of sulphuric, sulphurous, or hydrochloric acid have been added. Let the liquid stand over night to deposit its resin, then pour off and evaporate quickly, until, if 1 lb. of aloes have been used, about 2 lbs. of liquid remain. This left for twenty-four hours will deposit an abundant crop of yellow crystalline matter. This is to be well drained and pressed, and purified by recrystallization from water mixed with a little rectified spirit. The yield will be about twenty per cent. if the aloes be well selected. This aloin will bear very well frequent heating in aqueous solution, if the solution be neutral or slightly acid. Mr. Tilden is convinced that M. Kosman was in error in considering aloin a glucoside. As a proof of this, some aloin was dissolved in about an equal weight of pure  $\text{SO}_2$ ; the solution was gently heated for a few minutes, and then poured into some water and allowed to stand for four hours. This was saturated by an excess of pure carbonate of barium, filtered and evaporated over a water-bath, a small quantity of barium retained in solution was precipitated by sulphuric acid, and the liquid further concentrated, when pure aloin

crystallized out. A part of the solution left was tested by the fermentation test, but gave no evidence of the presence of sugar. The copper test is not applicable, because pure aloin reduces an alkaline copper solution freely and rapidly. With ferric salts aloin strikes an olive color.

3. *Resin*.—This can hardly be a resin, as it is readily soluble in hot water. Of its real nature little is known.

4. *Aloesic Acid*.—This has no existence; the acidity to test-paper presented by infusion of aloes is owing to the half-oxidized substance in aloesin.

Aloin, exposed to the air, undergoes a very slow change; but if in alkaline solution, this change is very rapid, the solution in a few hours becoming of a deep brown color, and in three or four days the aloin entirely disappears, having been converted into a brown substance, or mixture of substances, without bitterness, and at the same time the purgative power of the solution is lost. Mr. Tilden has taken large doses of this "oxidized extract" without any effect. He further states that "all existing facts point to the conclusion that the various kinds of aloes do not owe their purgative power to aloin." Also: "Until new facts suggest a different conclusion, I hold that the soluble, brown, uncrySTALLIZABLE substance, which constitutes a considerable proportion of aloes, is the part to which the purgative power is due."

## IMPROVED METHODS FOR PREPARING SOME OFFICIAL AND NON-OFFICIAL SYRUPS.

### SYRUP OF IPECACUANHA.

According to the Pharmacopœia, syrup of ipecacuanha is prepared by mixing the fluid extract with simple syrup; the fluid extract, having been made official for that especial purpose, is obtained by an impracticable, inconvenient, and tedious process, which consists in exhausting the root in fine powder by percolation with three parts of official alcohol (sp. gr., 835–85 per cent.). The percolate is evaporated to a syrupy liquid, mixed with acetic acid and water and boiled down to a certain limit, the residue filtered and added to an equal bulk of alcohol. After taking all this pains, the pharmacist finds, to his utmost chagrin, that this syrup of ipecac becomes nevertheless cloudy. To remedy this evil and the unnecessary expenditure of costly material and ill-repaid effort, the following modification is offered as an undeniable improvement.

A fluid extract of ipecac, to conform in strength with the official, is first prepared by *repercolating* any convenient quantity of the root

in moderately fine powder (passed through a sieve of 50 meshes to the linear inch), and divided into three equal parts, with a mixture of three parts of officinal alcohol (85 per cent.) and one of water; and to make syrup of ipecacuanha—

Take of this fluid extract, 2 fluid ounces.

Sugar, 28 troy ounces.

Water, a sufficient quantity.

To the fluid extract add 2 fluid ounces of water and heat the mixture to the boiling point; then add 12 fluid ounces of water, filter, and pour sufficient water through the filter to make the liquid measure one pint; in this dissolve the sugar with the aid of heat, and strain through muslin. This syrup can also be prepared by mixing the same quantity of officinal fluid extract with sufficient water to make the measure of a pint, letting the mixture rest several hours, then filtering and proceeding as above. Both preparations will be perfectly clear, beautiful, and identical in strength and appearance; but the former possesses the natural odor and taste of ipecac in an eminent degree, which cannot be claimed as strictly the same in case of the latter.

#### SYRUP OF LACTUCARIUM.

The officinal syrup is an unsightly affair, and the process is particularly weak, requiring that lactucarium, first rubbed with diluted alcohol to a syrupy liquid, be exhausted by percolation with that menstruum, that the percolate be then evaporated to a small bulk, and mixed with hot simple syrup. The performance of this percolation entails the greatest difficulty, and is tedious beyond measure, for which the pharmacist's recompense is a preparation exceedingly ugly in its outward appearance.

But all these obstacles vanish before the fact that lactucarium is completely exhausted by boiling water, with the consequent coagulation of its albumen, and further, that the aqueous extract is perfectly clarified by magnesium carbonate. From these data we derive the formula for syrup of lactucarium:—

Take of Lactucarium, 1 troy ounce.

Magnesium carbonate, 120 grains.

Sugar, 14 troy ounces.

Water, a sufficient quantity.

Triturate the lactucarium to powder, and heat it with eight fluid ounces of water to the boiling-point; maintain that temperature a few moments, and then strain the liquid off by wringing the mixture through muslin; add the strained liquid gradually to the magnesium carbonate with constant trituration, and filter through paper, pouring

sufficient water through the filter to make the filtrate measure eight fluid ounces, in which dissolve the sugar with heat, and strain through muslin. The product is, to say the least, elegant.

## SYRUP OF RHUBARB.

The officinal process for fluid extract of rhubarb is not of the most desirable nature. It consists in percolating rhubarb, in moderately fine powder, with officinal alcohol, until a certain measure is obtained, letting this aside to evaporate spontaneously, and continuing the exhaustion with diluted alcohol, evaporating this residuary percolate, adding sugar, and then the first part of the percolate, and again evaporating to a certain measure. This fluid extract is mixed with simple syrup, and produces the officinal syrup of rhubarb, which is rendered a very unsightly preparation by the precipitation of objectionable resin.

In the modified process, a fluid extract of rhubarb equal to the officinal in strength is first obtained by repercolating rhubarb, in moderately fine powder, with a mixture of three parts of officinal alcohol and one of water. This menstruum exhausts rhubarb completely with the greatest facility, since the inert viscid matters are not taken up by it. To make the syrup—

Take of this fluid extract, 3 fluid ounces.

Sugar, 28 troy ounces.

Water, a sufficient quantity.

Add the fluid extract to 12 fluid ounces of water, filter, make up the filtrate to the measure of a pint by adding water through the filter, and dissolve in it the sugar with the aid of a gentle heat, and strain through muslin. The result is splendid. An equal product is obtained by mixing the officinal fluid extract with water, letting it repose some hours, filtering, and then completing as above.

## SYRUP OF SENEKA.

Through the anomalous process the intended requirements of the Pharmacopœia for this officinal are placed beyond the reach of the pharmacist. The root, in moderately fine powder, is exhausted by percolation with diluted alcohol, the resulting percolate evaporated to a given measure, and the sugar dissolved in the residual liquid after filtration. Firstly, diluted alcohol is not a proper menstruum, owing to the large amount of a viscid constituent of the root, as in case of its presence complete exhaustion is effected but slowly and with difficulty. Secondly, evaporation and boiling of the percolate does not entirely remove the viscid matters, and therefore renders the filtration

of the final liquid very troublesome; moreover, after the solution of the sugar in the perfectly clear filtrate, the syrup again assumes a very turbid appearance.

The improved method comprises, first, the formation of a fluid extract of seneka, and its production rests upon the circumstance that seneka root, in moderately fine powder, is completely exhausted with less than three parts of officinal alcohol (85 per cent.), to the exclusion of pectin, mucilage, and albuminous matter. This fact is ascertained by percolating seneka, after its treatment, with diluted alcohol, to which neither color nor taste is imparted, and that the percolate with officinal alcohol yields, on evaporation, a perfectly clear and transparent brown extract. The fluid extract of seneka, of which every fluid ounce represents one troy ounce of the root, is prepared by repercolating any convenient quantity of seneka in moderately fine powder, and divided into three equal parts, with officinal alcohol (85 per cent.). To make syrup of seneka:—

Take of this fluid extract, 4 fluid ounces.

Magnesium carbonate, 240 grains.

Sugar, 16 troy ounces.

Water, sufficient.

Evaporate the fluid extract, by means of a sand or water bath, to a syrupy liquid; mix this with the magnesium carbonate, by trituration, and gradually add 8 fluid ounces of water, constantly stirring; filter, and add sufficient water, through the filter, to make the liquid measure 8 fluid ounces, then dissolve in it the sugar, with the aid of heat, and strain through muslin while hot. The product, for its permanence and elegant appearance, cannot be surpassed.

To prepare this syrup directly from a fluid extract, by merely mixing that with simple syrup, would render the preparation uncommonly thin, and introduce an excessively large proportion of alcohol, which would be an unquestionable and serious objection.

#### COMPOUND SYRUP OF SQUILL,

which, in consideration of the superior claims attached to seneka, its most important component, rightly should be entitled compound syrup of seneka, if there is anything in a name.

We are forced to acknowledge, with feelings of regret, that by cause of a defective formula and the consequent instability of its product, pharmacentists have but too good a pretext for disregarding the official injunctions relating to this important and popular preparation; and in view of the present recognized formula, the fact becomes painfully apparent that the extensive literature centered about this nucleus has been of no avail.

The syrup, as made according to the pharmacopœia, is too much contaminated with pectin and mucilaginous matter, and too weak in sugar to be permanent. The process is too tedious in its execution, and does not always yield a clear syrup.

The proposed process consists in the employment of fluid extract of seneka and fluid extract of squill; but the production of the latter by a practical and easy method, so as to completely represent the crude material volume for weight, yet remains a pharmaceutical enigma. Owing to the very gummy nature of squill, percolation with whatever strength of alcoholic menstruum cannot be successfully applied. But even if this fluid extract, otherwise carefully prepared, does not completely represent the total activity of the crude material, that cannot be claimed as a vital objection, in consequence of the natural variations in the activity of all crude medicinal substances of vegetable origin, which constitute the basis of similar preparations.

Now, a very good fluid extract of squill, which will compare favorably with others made by more indirect methods, can be produced by repercolation of squill in the finest dusted powder, with stronger alcohol (95 per cent.), so that with squill of the proper fineness and alcohol of the requisite strength, an excellent product results with the greatest ease, leaving a residue possessing very little bitterness, and which, in a practical point of view, can be fairly considered as exhausted.

This process has advantages far exceeding, in every point of utility, the one advocated by Mr. Diehl, whose process was subjected to a most critical test.

Repeating his experiments with different samples of squill, and in quantities of upwards of 80 troy ounces, identical results were obtained, but eminently dissimilar to his, and vastly conflicting with his statements.

These differences may, however, be entirely attributed to the variety of squill he operated with; and granting that it must have been a very scarce variety, it does not seem strictly just that he should base his conclusions upon that one experiment alone.

The squill twice treated with water as he directs, the liquid evaporated, and the light yellow syrupy residue mixed with abundance of stronger alcohol, produced a perfect white doughy magma, equal to at least one-third of the original bulk of the squill, and which was manifestly impervious to alcohol, and therefore could not be washed with that solvent; consequently the absorbed liquid was a total loss, which could not act otherwise than deeply injurious to the strength of the final product. The liquid, separated from this immense doughy mass, was pale yellow, and nearly as mobile as alcohol itself, but possessed an exceedingly bitter taste. Mr. Diehl asserts that, in his experiment,

the precipitate separated by the alcohol was brown, and very diminutive in its weight, being only  $3\frac{1}{4}$  per cent. of the squill employed, and that the liquid separated from this precipitate by washing was syrupy and very dark-colored, which produced a milky vinegar of squill, but a clear syrup. These various results, with exception of that pertaining to the vinegar of squill, were, however, not corroborated by the repetition of that operator's experiments.

From the foregoing deductions we derive the following formula for compound syrup of squill:—

Take of Fluid extract of seneka,  
 Fluid extract of squill, of each.....4 ounces.  
 Magnesium carbonate.....1 troy ounce.  
 Sugar.....42 “  
 Antimony and potassium tartrate..48 grains.  
 Water, a sufficiency.

Mix the fluid extracts, and evaporate the mixture by means of a sand or water bath to a syrupy consistence. Triturate this residue with the magnesium carbonate, and gradually add 20 fluid ounces of water, stirring constantly; filter, and pour sufficient water through the filter to make the liquid measure 22 fluid ounces. In this dissolve the antimonial tartrate and the sugar with the aid of heat, and strain the syrup through muslin while hot. The result leaves nothing to be desired.

Of the numerous German officinal preparations that are in frequent demand with us, for reason of their importance in this respect, and for the want of convenient and accurate processes, two of them will be noticed here, namely, the syrup of rhubarb of the Prussian Pharmacopœia, and the aqueous tincture of rhubarb of the same. The officinal methods for these preparations are very unscientific indeed, and admit of improvement, which, without requiring any further commendations, is applied by converting, for this purpose, the fluid extract of rhubarb above proposed, into an alkaline fluid extract of rhubarb, which is effected by triturating 80 grains of dipotassium carbonate with one fluid ounce of fluid extract of rhubarb, then straining through muslin at once, or after a repose of some hours. The strained liquid is perfectly clear, and does not require filtration through paper. The alkaline fluid extract of rhubarb can be mixed with water in any proportion, affording a perfectly clear and transparent liquid of a deep red color.

The following formulæ for syrup of rhubarb, and aqueous tincture rhubarb of the Prussian Pharmacopœia, are in officinal proportions, and yield a strictly officinal result:—

## SYRUP OF RHUBARB.

Take of Alkaline fluid extract of rhubarb.... 3 fluid ounces.

Oil of cinnamon..... 3 minims.

✓ Sugar..... 36 troy ounces.

Water, sufficient.

Mix the oil of cinnamon with the fluid extract, then add sufficient water to make the whole mixture weigh 20 troy ounces; in this dissolve the sugar with the aid of heat, and strain.

## TINCTURA RHEI AQUOSA, OR AQUEOUS TINCTURE OF RHUBARB.

Take of Alkaline fluid extract of rhubarb... 1½ fluid ounces.

Dipotassium carbonate ..... 240 grains.

Cinnamon water..... 4 troy ounces.

Water, sufficient.

Dissolve the dipotassium carbonate in the cinnamon water; with this then mix the fluid extract, and add sufficient water to make the whole weigh 14 troy ounces. Both the above formulæ produce permanent and beautiful preparations.—R. ROTHER, *Pharmacist*.

## EMULSIO HYDROCYANATA vs. ACID. HYDROCYANIC. DILUT.

In a paper with the above caption, Prof. Oscar Oldberg first dwells upon the liability of hydrocyanic acid, whether concentrated or in dilute solution, to undergo chemical decomposition, and states that very little of the officinal acid kept in the shops is of standard strength. He then objects to the second process of the U. S. P., on the ground of the general impurity of the commercial cyanide of silver, and the time required in preparing a fresh article. After this he says:—

The only way to remedy the evil is for physicians to prescribe some preparation which can conveniently be made *ex tempore*, and for which no substitute is possible. Such a preparation is the *emulsio hydrocyanata*, officinal in the Swedish Pharmacopœia, to the exclusion of dilute hydrocyanic acid. It is not new; it was officinally introduced in 1845, and has stood the test. Liebig and Wöhler demonstrated that when 17 grains of amygdalin were decomposed by the presence of emulsin, it gave rise to exactly one grain of anhydrous hydrocyanic acid.

This is the formula for the preparation of emulsio hydrocyanata:—

An emulsion is first made from 3 parts of sweet almonds, 2 parts of sugar, and 24 parts of water, *secundum artem*. To 80 parts of



this emulsion is added one part of amygdalin, and the mixture is allowed to macerate one hour. Each ounce of this emulsion contains one-third of a grain of anhydrous hydrocyanic acid, corresponding to about 32 grains of the dilute acid of the U. S. P. Dose, one to two teaspoonfuls.

The preparation is reliable uniform, elegant, and readily prepared whenever wanted for use.—*National Med. Jour.*, July, 1871.

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### SEEDS OF STRYCHNOS POTATORUM.

DR. FLÜCKIGER showed to the Natural History Society at Berne the seeds of *S. potatorum*, which are highly valued in India as a means of purifying water. The seeds are broken up into a coarse powder and are then mixed with the impure jungle-water, which shortly after this becomes clear. Dr. Flückiger explains this by the fact that the cold infusion of the seeds yield a copious precipitate with the least particle of tannic acid. The jungle-water he believes to be largely charged with the latter principle from the roots of plants, and the various impurities are carried down by the precipitate formed. A careful chemical analysis failed to detect a trace of any alkaloid in the seeds, which rarely contain more than one per cent. of nitrogen and yield no nitrogenous substance to water.—*Schmidt's Jahrbücher*, Nov. 5, 1871.

A paper in the *American Journal of Pharmacy*, by Prof. Maisch, shows that these seeds occasionally find their way to this country under the name of Indian Gum Nuts.

Speaking of the same seeds, Mr. Cooke says (*Pharm. Journ. and Trans.*), it is not so much the seed as the pericarp that commends itself to our notice. The former is not employed medicinally, whilst the latter is in common use amongst the natives as an emetic.

The use of the fruit as an emetic seems to have been wholly confined to the native practitioners. It has been supposed that the reason why it has never acquired repute is the improper way in which it is administered. The whole fruit is generally powdered and given in about half-teaspoonful doses. It is not surprising, therefore, that failure should take place, since the large seeds are not emetic, the dry pulp of the fruit and the pericarp alone possessing that property. If these are used separately, the result is said to be very satisfactory.

When sold separately the emetic portion of the fruit is found in the bazaars in two conditions. In one condition it is in thin, scaly, and shell-like pieces, which are shining externally, and of a greenish or yellowish-brown color. This is the pericarp removed when the fruit is

dry. In the other condition it is formed together with the mucus into large balls or masses weighing about one pound. In this condition it contains a large quantity of dry mucus, and is much superior in action to the other form. Mr. Moodeen Sheriff states that the dry mucus appears to be more efficacious in dysentery than ipecacuanha.

The dose of the simple powder of the pericarp, prepared in the usual way, and kept in a stoppered bottle, is from 40 to 50 grains as an emetic, and from 15 to 30 in dysentery.

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### CHINESE BLISTERING-FLIES.

BY F. PORTER SMITH, M.B. LOND., M.R.A.S.

IN no country is so much wealth gathered from the labors of insects as in China. The *Coccus lacca*, which produces the gum-lac; the *Coccus pellah*, which secretes the spermaceti-like wax of Chinese pharmacy; the *Coccus manniparus*, which prepares honey-sugar; the silk-worm; the diplolepis-gall produced upon the oak tree; and the nut-galls (*Wu-pei-tsze*) produced upon the *Rhus semilata* and *Rhus succedanea*, are instances, amongst others, of that ingenious turning to account of things which is a strong habit of the utilitarian Chinese.

Insects, a large class, called in Chinese classifications, *Ch'ung*, and including frogs, mollusks, etc., are consumed by the Chinese as internal remedies.

Centipedes, scorpions, pediculi, and many other larval or imaginal forms of insects, are swallowed in wine as antidotal, derivative, and revulsive remedies. An anomalous creature, called the *Hia-ts'au-tung-ch'ung* ("in summer a plant, in winter an insect"), is a capital sample of a Chinese pet medicine. It is the *Hepialus* moth, with the *Cordyceps Sinensis* (fungus) growing parasitically upon it.

Blistering-flies are largely used in China. They are employed as diuretics, and to produce criminal abortion, so that their sale to ordinary persons is scarcely legal, and their use for such a purpose heavily punished by the Manchu Code of China. The *Mylabris cichorii* (*Pan-mau*), the Telini fly of India, is largely used in the country, as in the composition of an eye-powder (*Yé-ming-sha*) commonly believed to be the dung of the bat. This insect is an excellent substitute for the *Cantharis* of European pharmacy. The *Cantharis erythrocephala*, a common European species, is met with in North China, but the *Cantharis vesicatoria* has not been met with.

Species of so-called *Epicauta* are met with in China, and are apparently called *Tsáu-mau*, or zizyphus bug, from their resemblance to the fruit of that genus of so-called "dates." The genus *Epicauta*,

known by their running more to legs and horns, is now generally put with *Lytta* and *Cantharis*.

Another kind of blistering-fly, new to European pharmacy, is the *Chú-kí*, or ailanthus bug. It is called, literally, the "fowl of the *Ailanthus foetida*," from the noise which it makes in common with other cicadaceous insects of the class *Homoptera*. It is also called *Hung-liang-tsze*, or "red lady-bug," a curious coincidence with the name of a common English insect, the lady-bird. Several species or varieties of this insect are described or alluded to in the *Pun-ts'au-kang-muh*, or Chinese pharmacopœia. The genus called *Huechys*, from the Chinese name for blood, is met with in Java, as well as in North and South China and other places. The head, thorax, and legs are black; the prothorax is red; the eyes are very prominent; a large red bright spot on each side of the thorax above; the front pair of wings are dark-brown, appearing nearly black when closed on the back of the insect; the hind pair of wings are pale, with brown veins; and the belly of the creature is of a bright vermilion-red color. Mr. Frederick Smith, of the British Museum, informs me that Burmeister places this insect, which I have called the red cicada on page 237 of my work on Chinese materia medica, in the order *Cicadina*, family *Stridulantiæ*. This same gentleman also informs me that Olivier (*Encycl. Méthod.*, v. 756) calls it the *Cicada sanguinolenta*, whilst Amyot and Serville describe it as the *Huechys sanguinea*. This latter name is redundant, as both the genus and species mean bloody. It would be better to call the Chinese species *Huechys vesicatoria*. One Chinese variety is called the "ash-colored moth." The *chú-kí* is met with in Sechuen, Shansi, Honan, and Hupeh, and frequents the *Ailanthus*, *Broussonetia* (*Morus*) *papyrifera* and several other trees. They are met with in great quantities in autumn, when they make a grinding noise, and are collected by the country people, who sell them fresh to the druggists at a few pence per pound. They are capable of raising a blister, but are much less powerful than the *Mylabris cichorii*, with which they are combined in the treatment of hydrophobia. The legs and wings are removed, and the bodies only used for medicinal purposes. They are recommended in the *Pun-ts'au* as a remedy in barrenness, impotency, menstrual disorders, deficient lochia, lumbago, diseases of the eye, etc. The drug is curiously directed to be used as a vaginal suppository in female disorders. It is combined with olibanum, arsenic, sal-ammoniac, and rice-paste, as an application to struma of the neck. Their use in hydrophobia, along with the *Mylabris*, to produce strangury, is in accordance with Chinese theory that the bite of a mad dog impregnates the person, who is not safe until the delivery of a foetal dog by way of the urinary passages. Hydrophobia is with

them the climax of the period of gestation, and they promote parturition by giving the *Huechys* and the *Mylabris* internally; or, rather, they endeavor to induce abortion, as the drug is administered in wine at once in such quantities as to cause violent strangury. Along with the blood and other substances passed by the patient, they profess to find a little dog. The Chinese doctors reason well enough that dog-bitten people die, and may be fairly treated after any extreme fashion. From this it may be gathered that the people die after the remedy even more promptly than after the bite alone. The drug can therefore be scarcely recommended for trial in such cases. It is creditable that few remedies are highly vaunted in Chinese medical works for a malady which is common in China, where dogs are as plentiful and plaguy as in Constantinople. These blistering cicadas keep very badly, and therefore often disappoint the purchaser in China, where drugs are badly treated, like the patients.—*Medical Times and Gazette*.

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#### DETECTION OF TURMERIC IN POWDERED RHUBARB AND YELLOW MUSTARD.

To detect turmeric in powdered rhubarb, Prof. Maisch gives the following process:—

A small quantity of the suspected rhubarb is agitated for a minute or two with strong alcohol, and then filtered. Chrysophanic acid being sparingly soluble in this menstruum, the brown-yellow color of the filtrate is due to the resinous principles of rhubarb mainly; if adulterated with turmeric, the tincture will be of a brighter yellow shade. A strong solution of borax produces in both tinctures a deep brown-red color. If now pure muriatic acid be added in large excess, the tincture of pure rhubarb will instantly assume a light yellow color, while the tincture of the adulterated powder will change merely to a lighter shade of brown-red. The test is a very delicate one, and is based on the liberation of boracic acid, which imparts to curcumin a color similar to that produced by alkalies, while all the soluble principles of rhubarb yield pale yellow solutions in acid liquids.

The same test, applied in the same manner, is also useful to detect turmeric in mustard flour.

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#### NOTES ON BIRD-OILS.

BY P. L. SIMMONDS.

THE Penguin (*Diomedea chilensis*) in the Falkland Islands is chiefly sought after for its oil, deriving its name from its pinguidity or excessive fatness. On the islands of the Falkland group these birds

are found in millions, and schooners, with a gang of twelve or fifteen men, go there solely for boiling down the oil of the birds. The fat of eleven birds skimmed gives about one gallon of oil, and each schooner or gang of men will return to Stanley, after a month or six weeks' campaign, with from 25,000 to 30,000 gallons of oil. This oil, which comes chiefly to London, is used, I believe, for currying leather only. I have sent Mr. Stanford and the museum of the Society specimens of this oil. It varies in color according to the time it has been boiled.

Another bird-oil largely sought for in the islands of Bass's Straits and New Zealand, is from what is called locally the mutton-bird (*Procellaria obscura*). Large quantities of oil are obtained from the young birds. The body is pressed and the oil runs from the mouth, each bird yielding about half a gill. The oil is reputed to possess considerable virtue as a liniment in cases of rheumatism. The fat, when clean, is pure white and looks like goose-fat, but the taste is rather oily; however, it may be used for a good many purposes other than for food. It burns very well in small, shallow tin lamps, which get warmed by the light and melt the fat.

Father Labat (*Nouv. Voy.*, tome vi. p. 395) speaks of the virtues of the grease or fat of the frigate-bird. Applied hot and mixed with alcohol, it is said to be an admirable specific in sciatica, and in numbness of the limbs and other ailments arising from a want of circulation. A piece of blotting-paper steeped in the mixture may be laid on the part, with compresses and a bandage to keep it in its place.

Mother Carey's chickens (*Procellaria pelagica*) are killed in quantities at the Western Islands for their oil. They are so plump that the islanders merely draw a candle-wick through the body, and it becomes so saturated with the liquid fat as to form a lamp without further process.

Ostrich fat has much local repute. The first care of the sportsman after securing his bird is to remove the skin, so as to preserve the feathers uninjured; the next is to melt down the fat and pour it into bags formed out of the skin of the thigh and leg, strongly tied at the lower end. The grease of an ostrich in good condition fills both its legs; and as it brings three times the price of common butter, it is considered no despicable part of the game. It is not only eaten with bread and used in the preparation of kooskoos and other articles of food, but the Arabs reckon it a valuable remedy in various maladies. In rheumatic attacks, for instance, they rub it on the part affected till it penetrates thoroughly, then lay the patient in the burning sand, with his head carefully protected; a profuse perspiration comes on, and the cure is complete. In bilious disorders, the grease is slightly warmed, mixed with salt and administered as a potion. It acts thus as a powerful aperient, and causes great emaciation for the time; but,

according to the Arabs, the patient, having thus been relieved from all the bad humors in his body, afterwards acquires robust health and his sight becomes singularly good.

The grease of the emu or Australian ostrich (*Dromaius Novæ-Hollandiæ*) is held in great esteem by both colonists and natives, as a cure of bruises and rheumatism. The skin of the bird produces six or seven quarts of a clear, beautiful, bright yellow inodorous oil. The method of obtaining the oil is to pluck the feathers, cut the skin into pieces and boil it.

At one of the Madras Industrial exhibitions, oil from peacocks' fat made in Tinnevely was shown, but it was not stated to what use it was applied.

In South America, in the immense cavern of Gaucharo, in the government of Cumana, Humboldt describes an extensive pursuit carried on of a bird, for its fat, by the Indians. This cave is peopled by millions of nocturnal birds (*Steatornis caripensis*), a new species of the *Caprimulgis* of Linnæus. About midsummer the young birds are slaughtered by thousands. The peritonæum is found loaded with fat, and a layer of the same substance reaches from the abdomen to the vent, forming a kind of cushion between the hind legs. Humboldt remarks that this quantity of fat in frugivorous animals not exposed to the light, and exerting but little muscular motion, brings to mind what has been long observed in the fattening of geese and oxen. It is well known, he adds, how favorable darkness and repose are to this process. The fat of the young birds is melted in clay pots, over a brushwood fire. It is half-liquid, transparent, inodorous, and so pure that it will keep above a year without turning rancid.

The passenger pigeons (*Columba migratoria*) of North America are another source of oil. They migrate at certain seasons in millions, and the Indians, watching their roosting-places in the forests, knock them on the head in the night and bring them away by thousands. The Indians preserve the oil or fat, which they use instead of butter. There was formerly scarcely any little Indian village in the interior where a hundred gallons of this oil might not at any time be purchased. The squabs, or young pigeons, when taken in quantity, are also melted down by the settlers as a substitute for butter or lard.—*Pharmaceutical Journal and Transactions*, June 17.

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**Amygdalin in Leguminosæ.**—According to U. Kreussler and H. Ritthausen, the powdered seeds of *vicia sativa*, when moistened, give off the odor of oil of bitter almonds, and a distillate from them yields prussic acid. Amygdalin (crystalline or amorphous) has not, however, as yet been separated from the seeds.—*Journ f. pr. Chemie*.

## CARBONATE OF SODA.

A NEW process for the production of carbonate of soda has been invented by M. Swager. By the joint aid of highly superheated steam and red heat, he decomposes the double chloride of aluminum and sodium, previously fused, thus forming aluminate of soda and hydrochloric acid. The latter is condensed; the former, treated with carbonic acid, yields carbonate of soda and alumina.—*New York Medical Record*.

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## PRESERVATION OF TINCT. KINO FROM GELATINIZING.

BY J. W. WOOD, ROKEBY, DEL.

AMONG all our tinctures perhaps there is not one so liable to deteriorate by exposure or by long keeping as tincture of kino, made in accordance with the U. S. Pharmacopœia. Its well-known property of gelatinizing in a short time—a property which yet remains to be investigated, it being thereby rendered inert—precludes it from being as extensively used as its virtues would seem to warrant. This property renders it inadmissible when we desire a reliable tincture to prepare it in large quantities.

The pharmacopœia formerly directed it to be prepared with dilute alcohol as the menstruum; but later it was thought to be of advantage to increase the proportion of alcohol to two-thirds, yet it is doubtful if there was much gained by this change.

I would therefore submit the following mode of preparation, which I consider, from the experience I have had, will meet with the desired end, and up to the present time results do not seem to disprove it. It is as follows:—

Take of Kino, in fine powder, oz.  $1\frac{1}{2}$ .

Alcohol, .835, fl. oz. 8.

Aquæ, fl. oz. 4.

Glycerinæ, fl. oz. 4.

Mix the alcohol, water, and glycerine together, and having mixed the kino with an equal bulk of clean sand, place the mixture in a percolator and pour on the menstruum.

This menstruum seems to thoroughly exhaust the drug of its astringent principle, and also makes a nice-looking preparation.

Some which I made on the sixteenth day of July, 1870, was exposed to the influence of the atmosphere, the stopper of the bottle containing it having been removed for several months, so that it had evaporated to at least two-thirds; yet it remains as good as when freshly made, without any apparent tendency to gelatinize.

The menstruum might be somewhat modified, perhaps, with advantage; as, for instance, by using proportionally less alcohol and more glycerine and water, or *vice versâ*. At any rate, I will give it for what it is worth, adding at the same time the suggestion—and it is only a suggestion—that the same menstruum be employed in preparing tinct. catechu, which, though not so liable to gelatinize as tinct. kino, yet sometimes does so.—*American Journal of Pharmacy*, August, 1871.

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### ADULTERATIONS OF BROMIDE OF POTASSIUM.

BY M. ADRIAN.

TEN samples of bromide of potassium, obtained from the principal French manufacturers, were analyzed, and only one of them was found sufficiently pure for medicinal purposes; the others contained from 10 to 15, one sample even 35 per cent., of impurities. The similarity in form of crystallization of bromide, iodide, and chloride of potassium makes a superficial inspection of no use; and one sample, remarkable for the whiteness, thickness, and regularity of its crystals, was found to be extremely impure.

The impurities are best recognized by dissolving ten grammes of the salt in 100 c. c. of solution; effervescence on addition of hydrochloric acid proves the presence of carbonates; one drop of benzole and a few drops of bromine water produce a rosy color if iodides are present; sulphate is detected by nitrate of baryta, and bromate by sulphuric acid producing a yellow coloration. After these preliminary tests, and after complete separation of the carbonate, sulphate, and iodide, the chloride may be determined by a standard solution of silver.—*Journ. de Pharm. et de Chim.*, and *Pharmac. Journal and Trans.*, Sept. 30, 1871.

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### GELATINE AS A VEHICLE FOR POWERFUL MEDICINES.

DR. T. HUSEMAN gives an account (*Centralblatt f. Med. Wiss.*, No. 157) of the method of Prof. A. Almen, of Upsala, for the administration of medicines by means of the *gelatinæ medicatæ in lamellis*. This method, which has been extensively used in Sweden, renders the administration of powerful medicines easy and exact. Gelatin (6 grammes) is dissolved in warm water, and then the medicine added. The solution is poured upon a plate of glass to solidify and dry. The stiffened mass, of the thickness of paper, is divided into squares, each of which contains a certain dose. A slight addition of glycerine serves



to make the otherwise brittle gelatinæ tough and flexible as paper. Too much glycerine makes the gelatinæ soft and too readily moist. With insoluble drugs it is necessary that the medicine be added to the solution of glue in a thick emulsion; gum acacia is to be preferred to gum tragacanth. The gelatinæ must not be placed dry upon the tongue, but moistened and swallowed with a gulp of water. The chief drugs thus used by Prof. Almen are gelatinæ morphii acetici, tartarized antimony, acetate of lead, sulphate of copper, extract. opii, opii levantici, extract. belladonnæ, extract. colocynth comp., hydrarg. chlorat. mitis, pulv. rad. ipecac., infusion ipecac., pulv. fol. digitalis, infusion digitalis, camphoræ. The gelatinæ atropiæ and physostigmatis, for local application to the eye, have proved useful; but the gelatinæ sinapis and cantharidum, for external application to the skin, have not yet been thoroughly tried.—*Medical Press and Circular*, Aug. 23, 1871.

### COMPOSITION OF CUBEBS.

BY E. A. SCHMIDT.

The analysis of fresh cubebs gave the following result:—

	Per cent.	
Water.....	4.75	
Essential oil.....	14.23	
Brown coloring matter.....	6.94	} =23.84 soluble in water.
Gum.....	8.19	
Starch.....	1.78	
Albumen.....	2.71	
Extractive matter and salts.....	4.22	
Oxalate of lime.....	0.40	
Cubebine.....	2.48	
Acid resin (cubebic acid).....	0.96	
Indifferent resin.....	2.56	
Green fatty oil.....	1.18	
Greenish-yellow soft fat.....	0.51	
Vegetable skeleton.....	43.07	
Loss.....	6.03	
	100.00	

The essential oil is colorless or pale green, tasting and smelling intensely of cubebs; it consists of two oils, the one being lighter, of sp. gr. 0.915, boiling-point 220° C., the other being less than one-half, has a sp. gr. of 0.937, and boiling-point 250° C. They both contain 88.26 C and 11.74 H, corresponding to  $C_{10}H_{16}$ .

It is neutral, soluble in 17 parts of absolute alcohol; it fulminates with iodine, is decomposed by sulphuric acid, and gives with hydrochloric acid vapor a solid and a liquid compound. The oil of fresh

cubebs does not contain any stearoptene, like that made from old cubebs.

Cubebine forms fine white needles. By itself it is tasteless, but it imparts a bitter taste to an alcoholic solution. It is insoluble in cold, and slightly soluble in hot water, soluble in 30 parts of ether, and in 75 parts of alcohol; also in chloroform, bisulphide of carbon, acetic acid, and in fatty and essential oils; it melts at 125°–126° C., boils at 190° C., but does not volatilize. It is neutral; concentrated sulphuric acid colors it red, nitric acid brown.—*Archiv. der Pharm.*, cxli. 1, and *Pharm. Journal*.

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## SACCHARATED TAR, OR SOLUBLE VEGETABLE TAR

BY M. A. ROUSSIN.

THE value of vegetable tar as a therapeutic agent is generally recognized, but hitherto, in consequence of the small extent to which it is soluble in water, its use has been limited. Many attempts have been made to secure a greater solubility, but this has only been obtained by the employment of alkalies—that is to say, by saponification. But saponification undoubtedly modifies the elements of the tar, and partly destroys its curative properties.

According to M. Adrian, “these preparations do not correspond by their chemical composition to the therapeutic properties that are expected in them,” and he states that he has found alkalies, as well as acids, to modify the resinous qualities that are the basis of the medicament.

Dr. Jeannel has expressed a similar opinion. He says it is necessary that the tar should be emulsed by a neutral substance, since by so doing all the natural properties of the tar would be preserved.

Impressed with the correctness of this idea, M. Roussin sought to adapt to vegetable tar the same process by which he was able, on a former occasion, to form an emulsion with balm of copaiba. At that time he proposed to use sugar for facilitating the emulsion of copaiba in water, and as a corrective of the repulsive taste of that substance—sugar being a neutral substance, without any chemical action capable of modifying the composition or curative properties of medicinal substances, and daily associated without hesitation with all kinds of remedies.

After several attempts this problem was resolved, and a complete solution of the vegetable tar in water obtained. The emulsion of tar was effected by triturating in a porcelain mortar, so as to obtain a

homogeneous paste, purified tar, powdered sugar, and powder of gum arabic. A small quantity of water was added to obtain an emulsion: it was then left to stand, and afterwards decanted. This saccharated emulsion had not the repulsive odor of the emulsion prepared with an alkali; it possessed the odor of tar, and a taste neither sharp nor bitter. It was miscible with water in all proportions, so that, by estimating the quantity of tar present, a solution might be prepared instantaneously, containing any required quantity of the active principle.

But the liquid form of the medicament presenting many and serious inconveniencies, it appeared to M. Roussin that the pulverulent form, with all its practical advantages, would be very desirable. He therefore pursued his researches until he succeeded in obtaining a saccharate as a yellow powder, only differing from sugar in appearance by its color, and exhaling the balsamic odor of tar. This preparation constitutes a remedy essentially new in form, and appears to be the real and complete solution of the problem of Dr. Jeannel.

The saccharate of tar is constant in its composition. It contains 4 per cent. of purified vegetable tar. A teaspoonful (5 grammes) thus represents 20 centigrammes of tar, and will suffice for the preparation of a litre of water.

According to M. Bouchardat, 30 grammes of tar-water contain nearly 1 centigramme of the principles of the tar in solution. This would be nearly 30 centigrammes to the litre. Soubeiran says that the proportion of matter dissolved in tar-water is so small that 100 grammes do not contain 4 centigrammes (less than 40 centigrammes the litre), and that patients can scarcely support the tar-water unless it be diluted.

The irritation of the stomach often provoked by the tar-water of the Codex is prevented by the saccharate; the proportion being but 4 per cent., the acidity of the tar is covered. Another advantage, not less important, due to its pulverulent form, is that it avoids the necessity of swallowing a large quantity of liquid, since a glass of water is sufficient to dissolve several teaspoonfuls. The physician can thus augment the quantity of tar according to the necessities of the patient.

The pulverulent form has another valuable advantage. Patients who are unable to overcome the repugnance the odor and taste of tar often provoke, may enjoy the benefits of this therapeutic agent by making up the saccharate into a pill with unleavened bread.

Gay, speaking of the acidity and repulsive taste of oil of tar, recommended that it should be sweetened, "in order to mask its flavor and its odor." Sugar, as I have said, does not alter the therapeutic properties, but modifies its organic properties and facilitates its absorption. While retaining the odor and taste of the remedy, the saccharate

so disguises them that the most delicate stomachs can bear it without repugnance.

The saccharate of tar is not the result of a chemical reaction; it is a simple mixture, each element of which retains intact its composition and its properties. Constant in its composition, it will furnish solutions really and mathematically entitled to the name, being able to fulfil all the conditions necessary for mixtures, gargles, injections, etc., and enabling the physician to give his patient such quantity of tar as he may deem necessary.—*Journal de Pharmacie et de Chimie, and Pharmaceut. Journ. and Trans.*

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### ON CRYSTALLINE ACONITINE.

THE substance to which I propose to give the name of Crystalline Aconitine, says M. Duquesnel, to distinguish it from what has hitherto been called aconitine, is really the active principle of *aconitus napellus*. In order to prepare it, macerate in very concentrated alcohol, with the one-hundredth of tartaric acid added, selected and powdered roots of *aconitus napellus*. Then distil the tincture, protected from the air, at a temperature not exceeding 60° (C.?), until all the alcohol is driven off; then make a watery infusion of the extract left. This contains all the aconitine, in the condition of an acid tartrate. It is to be agitated with ether, which takes away the coloring matter, and an alkaline bicarbonate added until effervescence ceases. Ether now being added, dissolves the alkaloid, which crystallizes when the ethereal solution is allowed to evaporate.

Crystalline aconite is in colorless rhombic or hexagonal tables, with angles of different acuteness. Its formula is  $C_{20}H_{26}NO_4$ . Up to 100° C., it and its salts are permanent even in solution. At 100° C., in solution, it rapidly disappears, sometimes partially, sometimes completely. It is insoluble in simple water, freely so in acidulated water. It is not volatile even at 600°C. At 130° it appears to be partially decomposed and partially volatilized. Precipitated by means of an alkali from the solution of one of its salts, it is amorphous, pulverulent, whitish, and contains water of hydration, which it loses at 100° C. without change of aspect. It is soluble in ether, alcohol, benzine, and especially in chloroform; insoluble in glycerine. It polarizes to the left. Its reaction is feebly alkaline, and forms salts with the acids. Phosphoric acid, tannin, iodurated iodide of potassium, and iodo-hydrargyrate of potassium are the best reagents; but it can only be certainly recognized by its physiological effects, the least trace of it, in alcoholic solution, producing on the tongue marked pricking and tingling.—*Journal de Pharmacie et de Chimie*, August, 1871.

*Table of Reaction of Digitalis and Allied Substances, from Dr. G. Draggendorf's Untersuchungen aus dem pharmaceutischen Institut in Dorpat, copied into Zeitschrift des Allgemeinen Oester Apoth. Verein, July 20, 1871.*

NAME.	PHYSIOLOGICAL ACTION.	ACTION OF SO <sub>2</sub> .	ACTION OF SO <sub>2</sub> AND A LITTLE WATER.	ACTION OF SO <sub>2</sub> AND BROMINE.	ACTION OF FROHDE'S REAGENT.	RELATION TO MU-RIATIC ACID.	REMARKS.
Digitalin.	Showing an irregularity of the heart's action. Arrest mostly in systole. No paralysis of extremities.	Green solution.	Green.	Reddish brown, with water again green.	Dark orange, then red, then greenish brown.	Yellow green, then emerald green solution.	
Digitalin.	The same.	Red solution.	Pale green.	Beautiful purple red, becoming green with water.	Same as digitalin.	Greenish brown solution.	
Convallamarin.	The same. Over muscular contractility and respiration.	Yellow solution, brown red, at last becoming violet from the border.	A violet color follows quickly the putting a little water in the sulphuric acid solution.	Does not become red or only through the water of the bromine solution.	As towards SO <sub>2</sub> .	Green reddish solution by heating.	
Helleborein.	Arrest during diastole. No weakness of reflex actions or muscular contractility.	An almost immediate splendid red solution, gradually becoming violet.	Remains, if not too much water be used, red.	The color of SO <sub>2</sub> solution; removed by the bromine.	As with SO <sub>2</sub> , but color pales sooner.	Dissolves without color.	
Active principle of the Scilla maritima. Quillaja.	Arrest in the diastole. Paralysis of extremities. Reflex motions weak, or not perceptible.	A brown solution, becoming, on standing in the air, blue, violet, or red from the border.	Remains red, even with 3 vols. of water.	Becomes colorless with bromine, or reddish sometimes.	As with SO <sub>2</sub> , but later pure violet.		
Scoggin.	Weaker, but similar to the former.	Dissolves yellow, then reddish yellow, gradually from the border violet to red.	One time red or violet; so remains if only 1 vol. of water.	Remains brown.	Colors brown, and here and there violet.		

Emulsion.	Still weaker.	Dissolves brown, becoming later red.	The brown SO <sub>2</sub> solution with a little water becomes red.	Remains brown.	As with SO <sub>2</sub> .	Almost totally insoluble in benzine.
Veratrin.	Causes a red subcutaneous. Tetanus in frogs.	Dissolves yellow, then becomes brown, soon a permanent red.	A small amount of water causes red quick to appear.	Bromine causes the red quickly to appear.	The red color less pure than with SO <sub>2</sub> , otherwise the same.	Alkaloidal reaction.
Delphinin.	Arrest in diastole.	Dissolves reddish brown.	With 4 vols. of water, dirty reddish rose.	As digitalin, only bleaches more quickly.	Red brown, then brown.	Colorless.
Antiarin.	Arrests in frogs both heart and respiration.	Remains colorless.	Remains colorless.	(?)	(?)	Remains colorless.
Cascarillin.	Without influence.	Reddish brown solution.		The reddish solution, sometimes with violet streaks.	Brown solution.	Remains colorless.
Principle of Dulcamara.	Without influence.	Dissolves yellow, later reddish.			Yellow solution, afterwards reddish.	
Principle of Jalap-stem and 100:1.	Without influence.	Brown solution, becoming violet red or pure red.			As towards SO <sub>2</sub> .	
Principle of Fumaria.	Without influence.	Brown solution; later beautiful red.			As towards SO <sub>2</sub> , still color lost sooner.	

## A NEW EXCIPIENT FOR PILLS.

BY J. B. BARNES.

SOLUBLE cream of tartar is a solution of bitartrate of potash in baborate of soda, boracic acid, or biborate of soda and tartaric acid; either of these compounds, when evaporated to the consistence of mucilage, is heavy and adhesive.

Having had my attention directed in an especial manner to the medicinal properties of sulphur, I was naturally led to reflect upon the inelegant mode of its administration. It is true the sulphur electuary of the Pharmacopœia is an improvement upon the horrible mixture of sulphur and treacle in common use, but still there is the grittiness and the mess. Sulphur is generally taken in combination with bitartrate of potash; and the soluble modification of this salt possessing the above-mentioned properties, it suggested to my mind the employment of so appropriate an excipient for the conversion of this substance into pills; and I venture to suggest that pills so prepared might be employed when this substance is required to be taken in doses of between four and twenty grains.

The samples of sulphur pills on the table, prepared respectively with the sublimed and precipitated varieties, contain in each four or five grains, together with one grain in twelve pills of gum tragacanth and a sufficient quantity of soluble cream of tartar. The pills containing four grains of precipitated sulphur are smaller than it is possible to prepare them with any of the ordinary excipients, being not quite so large as a five-grain compound rhubarb pill, and as hard as a lozenge. When placed in tepid water, the soluble cream of tartar speedily dissolves and the sulphur is set free.

I propose to call them "sulphur and cream of tartar pills."

I have also prepared five-grain pills of hydrate of chloral, Dover's powder, nitrate of potash, chlorate of potash, citrate of potash and gallic acid.

In the conversion of Dover's powder into pills, soluble cream of tartar only was used; for those of nitrate of potash and chlorate of potash, one grain to the drachm of gum tragacanth was employed, in addition to the soluble cream of tartar; for those of citrate of potash and gallic acid took two grains of the gum to each dozen. With the exception of the gallic acid, all these pills are smaller than an ordinary five-grain pill. All are firm, dissolve quickly in tepid water, and, what is of considerable importance, present a good appearance.—*Pharmaceutical Journal and Trans.*, Nov. 4, 1871.

## ON THE EMULSION OF TAR WITH SAPONINE.

M. LUCIEN LEBEUF recommends strongly (*Journal de Pharmacie et de Chimie*, October, 1871) a preparation of tar emulsified in water with saponine. The emulsion is so prepared that a tablespoonful (206 grs.) contains about 6 grs. of the tar. It should be freely diluted when given. The saponine is only in the proportion of one part in five hundred, has no chemical effect whatever on the tar, and in the small quantity given is certainly free from action of the economy. The emulsion affords a ready means of administering tar by the atomizer.

(This preparation does not seem to the editor of NEW REMEDIES as good for internal use as the preceding.)

## HOW CRUDE RUBBER IS COLLECTED.

GREYTOWN, Nicaragua, is the principal port for the export of india-rubber on the coast. It is collected by parties of Indians, Caribs, or half-caste Creoles—seldom by Europeans—to whom the dealers, who are also storekeepers, advance the necessary outfit of food, clothing, and apparatus for collecting rubber, on condition of receiving the whole of the rubber collected at a certain rate. The rubber-hunters are termed *Uleros* (*Ule* being the Creole term for rubber). A party of Uleros, after a final debauch at Greytown, having expended all their remaining cash, generally make a start in a canoe for one of the rivers or streams which abound on the coast, and having fixed on a convenient spot for a camp, commence operations. The experienced rubber-hunter marks out all the trees in the neighborhood. The rubber-tree is the *Castilloa elastica*, which grows to a great size, being on an average about four feet in diameter, and from twenty to thirty feet to the first spring of the branches. From all the trees in the almost impenetrable jungle hang numerous trailing parasites, lianes, etc.; from these, and especially the tough vines, are made rude ladders, which are suspended close to the trunks of the trees selected, which are now slashed by machetes in diagonal cuts from right to left, so as to meet in the middle and central channels, which lead into iron gutters driven in below, and these again into the wooden pails. The pails are soon full of the white milk, and are emptied into larger tin pans. The milk is next pressed through a sieve, and subsequently coagulated by a judicious application of the juice of a Bejuca (an *Apocyna*) vine. The coagulated mass is then pressed by hand, and finally rolled out on a board with a wooden roller. The rubber has now assumed the form of a large pancake, nearly two feet in diameter, and about a quarter of an



inch thick, on account of which they are termed *tortillas* by the Uloros; those cakes are hung over the side poles and framework which supports the *rancho*, which is erected in the woods, and allowed to dry for about a fortnight, when they are ready to be packed for delivery to the dealer.—*Scientific American*.

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### SUPPOSITORIES.

MR. FRANK R. PARTRIDGE (*Druggists' Circular*, Sept. 1871) believes suppositories can be best prepared without the use of moulds, and writes as follows:—

Take cocoa-butter, which has been kept in a cool place, and powder it in a Wedgewood mortar. This can be done with proper care and sufficient trituration. Having reduced the butter to a uniform powder, mix with it the medicament prescribed. If an extract is directed, enough finely powdered slippery elm-bark (this is the best article for the purpose, as it is the least irritating) should be rubbed with it, to make the extract a damp powder. In all cases the medicament should be thoroughly powdered before mixing with the butter. After completely incorporating the medicament and excipient, make the whole into a mass by the aid of *very little* heat; the breath is sufficient in hot weather. Then, by putting the mass into a soft cotton cloth, it may be worked in the hands with as much ease as a good pill mass. After dividing it into the required number of parts, which can be more accurately done on a pill tile, mould them into the shape of a Minié rifle ball with the fingers, keeping the cloth between the suppository and the skin, thus rendering the moulding easy and preventing the mass from melting.

The quantity of cocoa-butter I generally use for a vaginal suppository is one drachm. A suppository made in this way will be ready for use almost as soon as it is moulded, will remain hard and not crumble. I have made them in this manner when the thermometer ranged from 90° to 98°, and have found no trouble. They soon harden, and remain in that condition till used.

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### METHOD OF DETERMINING THE VALUE OF CASTOR

M. HAGEN gives the following:—

1. The castor of Siberia is much more valuable than that of Canada, because it is richer in castorine, containing 4.6 per cent., whilst the Canadian has only 1.98.

The castorine, mixed with a little volatile oil, is easily obtained by using pure benzine as an extractor.

2. Treated with chloroform, castor yields a brown resin, which is dry and of a free (franche) odor, as obtained from the Canadian variety—more viscous and with a stronger odor when procured from the Siberian.

3. When the powdered castor is treated with alcohol, then with dilute hydrochloric acid, there is obtained, in from 10 to 20 hours, a liquid, which is yellowish or clear brown from the Canadian variety, deep brown with the Siberian.

4. The Canadian variety, powdered and macerated for some hours in an ammoniacal solution, gives a liquid more deep-colored than the Siberian.

5. The alcoholic tincture added to water gives a milky fluid; will on the addition of ammonia become clear, if the tincture was made with Siberian castor; on the contrary, not.—*L'Union Pharmaceutique*, August, 1871.

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### ERGOT OF RYE.

BY T. C. HERRMANN.

THE following abstract of a paper by Dr. T. C. Herrmann, originally published in *Büchners Repertorium für Pharmacie*, 1871, p. 283, is taken from the *London Pharmaceutical Journal* :—

Although ergot of rye has been repeatedly subjected to chemical analysis, there are several questions touching its component parts which have not been fully explained, and for this reason Dr. Herrmann has chosen the subject for his inaugural dissertation.

One of the constituents of ergot which required further investigation is the fatty oil, which, though not differing from other oils in general characteristics, is peculiar so far as, according to Manassewitz, it readily saponifies with caustic soda, but not at all with caustic potash; this statement Dr. Herrmann was enabled by his investigation to distinctly contradict.

Twenty ounces of powdered ergot were exhausted with ether, the last separated by distillation, and the oil, which amounted to 6 ounces, subjected to analysis. It was of a brownish yellow color, of aromatic flavor, and acrid taste, viscid, and its sp. gr. was .9249; it was not drying.

It consisted chiefly of palmitic acid, oleic acid, and glycerine, in the proportion of 22.703 per cent. palmitic acid, 69.205 oleic acid, and 8.091 glycerine; it also contains traces of acetic and butyric acid, of trimethylamin, ammonia, and ergotine as coloring matter.

Manassewitz doubted the existence of ecboline, the alkaloid first separated by Wendell, and Dr. Herrmann also settled this point.

Thirty ounces of powdered ergot were for several days digested with warm water, the aqueous extract mixed with acetate of lead, and the precipitate separated by filtration; excess of lead in the filtrate was separated by carbonate of soda, which, however, did not precipitate all the lead, the liquid remaining turbid even after filtration; it was therefore slightly acidified with muriatic acid and then dilute sulphuric acid added, which gave a clear solution; to this an excess of chloride of mercury was added, the dirty white precipitate was collected on a filter, and the alkaloid ecboline separated in the usual manner. It is soluble in water and alcohol, has a bitter taste and an alkaline reaction, and is precipitated in the following manner, viz., by chloride of mercury white, phosphoric molybdic acid yellow, tannin dirty white, biniodide of potassium reddish brown, chloride of gold brownish, chloride of platinum orange, only after some time, and cyanide of potassium white.

The inorganic constituents of ergot were also determined afresh, and the following table gives a comparison of former analyses with Dr. Herrmann's results, viz. :—

	Engelmann.	Manassewitz.	Thelau.	Herrmann.
Potash .....	88.97	88.00	17.93	30.06
Soda .....	14.39	14.75	11.42	0.65
Lime .....	1.43	1.50	1.24	1.33
Magnesia .....	4.58	4.70	2.00	4.87
Alumina .....	....	....	0.29	0.53
Oxide of iron .....	2.00	1.80	0.70	0.86
Oxide of manganese .....	....	....	3.95	0.36
Oxide of copper .....	....	....	0.53	....
Phosphoric acid .....	13.24	13.25	58.56	45.13
Sulphuric acid .....	0.02	....	....	....
Chlorine .....	2.03	2.10	....	....
Silica .....	9.13	8.30	2.54	14.67
Carbon .....	12.66	12.10	....	....
Chloride of sodium .....	....	....	0.66	1.50
Total .....	98.45	96.50	99.91	99.95

### CHEMICAL STUDY OF THE ALKALOIDS OF OPIUM.

DR. O. HESSE, having at his disposal a large amount of mother-liquor of opium, out of which the morphia, codeia, and pseudo-morphia had been separated, tried the methods for obtaining the new alkaloids, kryptopia, landania codamia, lanthopia, and meconidia. The black mother-liquor was diluted with an equal volume of water, treated with ammonia in excess, etc., as described in *Annal. Chem. et Pharm.*, cliii. 47. It was found that the alkaloids could be separated into two groups by using natron, the one set dissolving, the other remaining.

The alkaline solution of the alkaloids contained a little lanthopia, no codeia (it having been previously separated), no mekonidia, very little codamia, but a quantity of laudania. The last was easily obtained if the solution was precipitated by excess of ammonia and the precipitate dissolved in hot alcohol, out of which, on cooling, crystallized white crystals, from which the laudania could be separated by means of hydriodic acid. Dr. Hesse, from his new experiments, considers the melting-point of laudania  $166^{\circ}$  (C.), its formula  $C_{11}H_{11}NO_4$ . Codamia has a melting-point of  $126^{\circ}$ ; its formula was not made out with certainty.

The residue, insoluble in natron, was dissolved in acetic acid, the solution with the addition of alcohol sufficiently neutralized, and papaverin and narcotine crystallized out. They were separated by means of oxalic acid. The formula obtained for narcotia was  $C_{11}H_{11}NO_4$ ; the melting-point  $176^{\circ}$  C.

The papaverin had the formula  $C_{11}H_{11}NO_4$ . Small quantities of it, perfectly pure, dissolved without color in concentrated sulphuric acid. In larger quantities a blue solution resulted, whilst the rise in temperature indicated destruction of the base by the acid. When water is added the sulphate of papaverin separates as a resinous mass out of its sulphuric acid solution, a behavior which distinguishes it from all other opium alkaloids; for although pseudo-morphia affords a precipitate under like circumstances, it is in the form of a crystalline powder.

Even dilute nitric acid acts on papaverin, forming nitro-papaverin ( $C_{11}H_{11}(NO_2)NO_4$ ), which crystallizes in colorless, very thin prisms, which exposed to light rapidly becomes yellow, and melts at  $163^{\circ}$  C. This nitro-derivative forms beautiful crystalline salts with acids.

The neutralized acetic solution left after deposition of papaverin and narcotia contains thebaia, which, on addition of powdered tartaric acid, separates as a bitartrate, which is soluble in concentrated sulphuric acid.

Hesse was also successful in obtaining from the dark solution protopia, laudanisia, and hydrocotarma.

*Cryptopia*,  $C_{11}H_{11}NO_4$ , melts at  $217^{\circ}$  C., is readily soluble in chloroform, with difficulty in alcohol, insoluble in ether. It has a strong alkaline reaction, makes salts which are at first gelatinous, afterwards crystalline. Out of cold neutral solutions it is thrown by concentrated hydrochloric acid as a gelatinous mass, not as fine prisms.

*Protopia*,  $C_{11}H_{11}NO_4$ . Is very similar to the last; its salts do not gelatinize; its melting-point is  $202^{\circ}$  C.

*Laudanisia*,  $C_{11}H_{11}NO_4$ . Alkaline; melting-point  $89^{\circ}$  C. In prisms; soluble with difficulty in cold benzine; easily in hot. Alcohol

dissolves it when pure very readily, and deposits it in crystals. Out of ether, which also dissolves it easily, it is obtained in white cauliflower-like masses.

*Hydrocotarnia*,  $C_{11}H_{11}NO_2$ , crystallizes in colorless prisms, with  $\frac{1}{2}$  part water of crystallization; at  $100^\circ$  C. it undergoes partial decomposition, and at a higher heat gives off fumes with a penetrating smell of raw carbolic acid. Alcohol and ether dissolve it easily. It makes salts soluble in spirits of wine and water.—*Zeitschrift des Oester.-Apotheker Vereins*, Sept., 1871. *Berichte der Deutsch. Chem. Gesell. zu Berlin*, Bd. iv. s. 693.

## METHOD OF DETERMINING THE MORPHIA VALUE OF A SPECIMEN OF OPIUM.

BY JNO. T. MILLER.

*Apparatus*.—Three strong tubes of colorless glass, like ordinary test-tubes in form, about eight inches in length and of exactly equal bore, which should be about half an inch. At first I used graduated tubes, but afterwards found it better to employ separate measures of smaller calibre, viz., a pipette to deliver 100 grain-measures; a tube-measure for 50 and 100 grain-measures; and a smaller one for 5, 7.5, and 10 grain-measures.

*Standard Solution of Morphia*.—Weigh off accurately one grain of pure and well-dried morphia, and dissolve it in 50 grain-measures of diluted sulphuric acid, B. P., and sufficient distilled water to make the volume exactly 1,000 grain-measures. This solution will keep without appreciable change for some weeks.

*Solution of Iodic Acid*.—Place in a flask 100 grains of iodine, 100 grains of potassium chlorate, 1 fluid drachm of strong nitric acid, and 2 ounces of water. Heat the mixture until the iodine is perfectly oxidized; nearly neutralize with sodium carbonate, then add an excess of solution of barium chloride. Wash the barium iodate by decantation, and boil it for half an hour with a fluid drachm of strong sulphuric acid and 3 ounces of water. When cold, filter, and add water to make the bulk 6 fluid ounces.

*Sample Solution*.—If the opium is in the moist state, dry 100 grains on the water-bath, and after noting the loss in weight, reduce it to *fine* powder. Put 20 grains of the powder into a two-ounce flask, with 1 grain of oxalic acid and half a fluid ounce of alcohol sp. gr. 0.833, and having attached a condensing tube to the flask, place the lower part of the latter in water hot enough to cause the spirit to boil gently, and continue the boiling for half an hour. Filter into a porcelain dish, and wash the residue with half a fluid ounce of hot spirit. Add to the filtrate half an ounce of water, and evaporate down to about a quarter of an ounce, stirring frequently; then add an ounce of cold water

After the mixture has stood for ten minutes or so, remove the precipitated resinoid matter by the filter, and wash it with a little cold water, adding the washings to the filtrate. Boil the latter with 10 grains of slaked lime for two or three minutes, filter, and wash the calcium compounds with hot water. Slightly acidulate the filtrate with solution of oxalic acid, and evaporate it down to about a fluid ounce. After cooling, add 12 grains of caustic potash, and set aside for a quarter of an hour; then filter, and wash the precipitate with a drachm of liquor potassæ, diluted with two or three times as much water. Divide the filtrate into two exactly equal portions; pour one of these into a 1,000 grain-measure, add 100 grain-measures of diluted sulphuric acid, B. P., and water up to the mark, and mix well. Finally, shake the small quantity of solution required for experiment—about half an ounce—with a fourth of its bulk of carbon disulphide, and pass it through a filter.

*The Experiment.*—Measure off with the pipette 100 grain-measures of the sample solution, and transfer it to one of the trial-tubes, add 100 grain-measures of carbon disulphide, and lastly, 50-grain measures of iodic acid solution; then immediately close the tube with a sound cork and shake briskly for *half a minute*. The rose-colored solution of iodine quickly subsides, but its brightness is sometimes rather obscured by a slight filmy deposit on the glass. In this case pour the contents of the tube into a clean one. Take next 100 grain-measures of the standard solution of morphia, and using a fresh tube, repeat the operation just described. Compare now the two rose-tinted liquids by holding the tubes side by side between the eye and a white cloud, or placing them against thin white paper attached to a window-pane. If the colors are equal in intensity, the powdered sample contains 10 per cent. of morphia. If unequal, add to the deeper one carbon disulphide in small successive measured quantities,—say of 5 or 10 grain-measures at a time, as may seem necessary,—gently mixing it in with a glass rod. When by this means the tints have been rendered equal in depth, the calculation is simple.

Let  $v$  = volume in grain-measures of standard color;

Let  $v'$  = volume in grain-measures of sample color;

then  $\frac{v' \times 10}{v} = x$  = percentage of morphia in powdered sample.

And if  $w$  = percentage loss of weight in drying,

$\frac{100 - w \times x}{100}$  = percentage of morphia in moist sample.

*Precaution.*—The carbon disulphide used must remain colorless when shaken with solution of iodic acid.

In order to test the ability of the eye to discern slight inequalities of

tint, the relative quantities of iodine in the standard and sample colors were sometimes estimated at the end of an experiment by Dupré's method. This was done by removing the supernatant aqueous liquid with a pipette, washing the solution of iodine with distilled water, transferring it to a stoppered bottle, and adding, with vigorous shaking, weak chlorine water from a burette until the color just disappeared. The results are given in the subjoined table, and show, I think, that the eye has a fair claim to be trusted. When a number of morphia determinations have to be made the use of this iodimetric process is convenient, as only a single daily reference to the standard is then needed.

The time required for determining the morphia value of opium on the above plan is about two hours and a half. As regards accuracy and reliability, I may state, that so far as my experiments have gone—and they have not been few—the results have appeared, after careful scrutiny, to be nearer approximations to the truth than those obtained by the ordinary methods by precipitation. I have, therefore, much confidence in the process. Nevertheless, I am ready to admit that an analytical method which deals, as this does, with a substance so complex and variable in composition as opium, must have an extended trial before its reliability can be placed altogether beyond doubt.

TABLE OF RESULTS

Sample.	Percentage of crude morphia obtained by B. P. process.	Weight of precipitate after washing with chloroform.	Amount of real morphia in precipitate estimated by reduction process.		Percentage of real morphia in sample as determined by reduction process.	
			Colorimetric.	Iodimetric.	Colorimetric.	Iodimetric.
1	13.8	12.8	11.0	.....	11.3	.....
2	12.0	10.8	9.4	.....	10.0	.....
3	11.2	10.0	8.8	.....	9.2	.....
4	10.2	9.3	7.7	7.81	8.0	8.1
5	5.8	5.6	5.0	.....	5.4	.....
6	16.2	15.0	13.6	.....	14.0	.....
7	6.4	6.1	5.5	5.76	6.4	6.43
8	10.0	9.4	9.0	.....	10.0	.....
9	13.8	12.6	11.0	11.2	11.5	11.8
10	11.3	10.6	9.6	.....	10.0	.....
11	14.2	13.0	11.6	.....	12.0	.....
12	6.1	5.7	5.0	5.13	5.1	5.28
13	10.4	9.8	8.7	.....	9.0	.....
14	12.6	12.4	12.0	.....	12.5	.....
15	11.4	10.1	8.8	8.6	9.6	9.5
16	9.5	8.7	7.6	7.4	8.3	8.43
17	9.4	9.2	8.8	.....	9.5	.....
18	17.4	15.8	13.8	14.0	14.5	14.2

—*London Pharm. Jour.*, Dec. 9, 1872.

## EXPERIMENTS ON LIVING CINCHONÆ.

IN the *Philosophical Transactions of the Royal Society of London*, Part 1, 1871, is a very interesting paper with the above caption by J. Broughton, Chemist to the Madras Cinchona Plantations. He states that quinic acid is as much the acid of the cinchonas as tartaric acid is that of the grape, and is found in the free state in most of the juices. Cinchona red does not exist in the living plant, but is formed by oxidation of the tannin during drying of the bark. The leaves are acid from quinic acid, bitter from quinorin, and contain merely traces of the alkaloids. The root-bark, and next to it the trunk-bark, are richest in alkaloids, which are also found in small amount in the wood. Six-sevenths of the alkaloids exist in the cells of the bark as insoluble tannates, the remaining seventh exist in solution as quinates.

When cinchona bark, not exposed to the direct rays of the sun, is carefully removed, new bark is rapidly formed. The alkaloid first found in the freshly forming tissues is quinine, although the species examined was of the kind that mainly produces cinchonidine. As first formed, however, the quinine refuses to form crystalline sulphate, it is uncrystallizable quinine. After two months of more growth a third part of this has obtained the ability to form crystallizable salts, and a small amount of cinchonidine and cinchonine have been formed. These latter continue to increase, and the increase seems to be made at the expense of the crystallizable quinine, which simultaneously diminishes. All the evidence seems to show that the alkaloids are formed *in situ*, in the very cells that contain them. The quinine in the leaves is the crystallizable kind, that of the freshly forming bark is uncrystallizable; a thing incredible if the alkaloid in the bark had simply been transported from the leaves. More than this, for seventeen months, the new bark differs from that on other parts of the tree in containing much quinine and little cinchonidine, the proportion being therefore precisely the reverse to what it is in the older portions.

Mr. Broughton, in concluding the paper, deduces evidence unfavorable to Liebig's theory that the alkaloids are the substitutes in the plants for the inorganic bases.

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SOLUTION OF PEPSINE AND PANCREATINE.

BY MR. LONG.

I HAVE been making experiments on pancreatine obtained directly from the fresh pancreas of the calf. The result has been quite what might have been expected from *a priori* reasoning, as you will see from the subjoined statements.



"Some difficulty was experienced in obtaining the solution of pancreatine in an eligible form for administration; but at last I succeeded in producing what as closely as possible represents the digestive fluids found in man. It is composed of pepsine and pancreatine in suitable proportions, using for the former a solution of pepsine introduced by me some time ago, and adding the solution of pancreatine as now prepared.

"In the experiments made to test its effects a very curious result was observed. Meat—beef and mutton—digested in pepsine alone was found to be entirely dissolved with the exception of the fat, which floated as a film on the surface, and the film was entirely emulsified when a proper quantity of pancreatine was added, and the usual conditions as to temperature, etc., attended to. This is exactly what we might expect, reasoning from known physiological principles.

"Pepsine in an effectual form has been a great boon; but, as I have shown above, it will not digest the oily or fatty aliments; failing thus to supply the system with the substances vitally necessary in strumous diseases. It is obvious how desirable the action of this fluid will be as an addendum to the use of cod-liver oil.

"The pancreatic emulsion has never seemed to me the nicest or most eligible mode of effecting what is desired. It is nauseous to the taste of many, and often keeps badly; the quantity of mutton suet employed, which may be supposed to be all the fatty matter the pancreatine present is capable of emulsifying, is not as much as might be desirable in many cases. In some, suet at all may not be the most suitable form of fat. The fluid I now describe is very palatable, and will keep almost any time. It may be given with any kind of food. My experiments were made with fat mutton-chops and rich beef-steaks, as typical aliments, with most satisfactory results.

"The first experiments, thrice repeated, were made with muriatic acid, water, and the combined solution, to represent the gastric juice and pancreatic secretion. The second with solution of pepsine alone, with acid and water, followed by the addition of the plain pancreatic solution after an interval of two hours. Both were entirely satisfactory; but the latter were peculiarly interesting in a physiological point of view, as stated above, and tended to show the exact part played by each fluid in the animal economy. But as the administration of two fluids in succession would be troublesome in practice and be scarcely attended to by patients (at all times averse to trouble), I have thought it desirable to mix the two in one fluid. This has the advantage of being quite agreeable, as liquor of pepsine always is; while the taste of the liquor of pancreatine is entirely concealed by the former. Some medical friends of mine reported most favorably of it, after trial in practice.

"The experiments in the laboratory were as follows:—

"No. 1.—Mutton (fat and lean about equal parts), one ounce; water, one ounce and a half; muriatic acid, fifteen minims; solution of pancreatine and pepsine, one drachm. Digested at 100° for four hours; this was converted into a homogeneous pulp, and then, diluted with a little water, presented quite a *chylous* appearance.

"No. 2.—Beef (fat and lean), an ounce and a half. Treated in the same way, with same result, the pulp being much deeper in color.

"Nos. 3 and 4.—I then operated on the same quantities of each, first digesting with pepsine solution alone, as intimated above, and then adding the liquor pancreatine—keeping up the heat. In these latter experiments the result seemed more perfect, but, as I have said, the same procedure would be rather inconvenient in practice.

"The results were found to be identical in three successive experiments, at intervals of several weeks."—*Pharm. Jour.*, London, Nov. 19, 1870.

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#### CATHARTIN A COMPLEX SUBSTANCE.

In a paper in the *Journal de Pharmacie et de Chimie*, Jan., 1872, M. E. Bourgoin states that he has resolved cathartin, obtained after the manner of Lassaigne and Feneulle, into chrysophanic acid, glucose, and chrysophanine.

Chrysophanic acid is separated from the cathartin by repeated washings with ether, in which it is soluble.

The presence of glucose is proven by the facts that the substance left by the ether when dissolved in water is capable of vinous fermentation, answers to Trommer's test, and, when chrysophanine is separated from it, and it is decolorized, deviates polarized light to the right.

Chrysophanine may be obtained, but not pure, by evaporating the solution spoken of after fermentation. A better plan is to precipitate the solution with sub-acetate of lead, and set free the chrysophanine in the precipitate by sulphuretted hydrogen. M. Bourgoin states that the cathartin only contains a small portion of the chrysophanine in the plant, and gives a process for obtaining it directly from the latter. He also states that he failed to find any of the cathartic acid of Dragendorff and Kubly in the cathartin.

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#### NITRITE OF AMYL.

In the *London Pharmaceutical Journal* of November 25, Mr. A. B. Tanner describes the following process as available for the manufacture of this drug on a small scale:—

The process by which I have been in the habit of preparing nitrite of amyl, and of which I now intend giving you a description, is one which I think will be found convenient for its preparation on a small scale, and of sufficient purity for medicinal use. The process for spirit of nitrous ether consists in distilling, at a certain temperature, a mixture of rectified spirit, sulphuric and nitric acids in certain proportion, and copper wire; the distillate consists mainly of a mixture of nitrite of ethyl and ethylic alcohol. Now, by substituting amyl alcohol for the rectified spirit in this process, you get nitrite of amyl among other products; but Mr. Maisch (*Journal of Phar.*, April, 1871) appears to have overlooked one fact, viz., that rectified spirit contains 16 per cent. of water, and that the amylic alcohol he used was nearly anhydrous. He states that the amylic alcohol, *i. e.* the purified substance, was mixed with sulphuric acid, the mixture introduced into a retort, together with some copper wire, and, after cooling,  $\text{HNO}_3$  was added. In a very few moments the evolution of gas was observed, the liquid became hot without the external application of heat, and the reaction very rapidly increased to such a violence that the entire charge was lost, it being impossible to condense any of the vapors in a Liebig's condenser, or to retain much of the liquid forced over into the receiver. I may add, that I have repeated this experiment with exactly the same results; nearly the whole charge was forced over into the receiver, and, while there, the action again commenced, and increased to such violence that I have no doubt it would have forced itself back into the retort again if their mutual positions had been favorable. As it was, I was obliged to introduce it to the open air, for the whole house became filled with the vapor, and every one who respired it became suddenly red in the face. Upon one of my assistants it had a very remarkable effect; it seemed to affect the muscles at the back part of the neck, and drew the head backwards, but this soon passed off. I should quite expect that the reaction would be just as violent in making spirit of nitrous ether, if we used anhydrous alcohol instead of 84 per cent., as ordered. In preparing the nitrite of amyl by the process I employ, it is of the utmost importance that the amylic alcohol be as pure as possible. Amylic alcohol, as you all know, is formed during the fermentation of potatoes, rye, barley, and the marc of grapes; and when these are distilled it communicates a very pungent, and to many repulsive, odor and taste to the spirits. It is considerably less volatile than either ordinary alcohol or water, having a boiling-point, when pure, of  $132^\circ \text{C}$ .; in consequence of this property, it accumulates in the last portions of the liquids that are distilled. Its name is derived from *amylum*, starch,—this being the most abundant constituent of potatoes. Liebig states that amylic alcohol is formed principally in the fermentation of alkaline or neutral

liquids, and its production in the potato mash may be prevented in great measure by adding crude tartar to the fermenting liquid. Its formation never occurs in acidulous fermenting liquors which contain tartaric, racemic, or citric acids. The addition of hops to the liquid has a similar effect in checking the development of amylic alcohol, or fusel oil, as it is generally termed. It is, when pure, a colorless limpid liquid, of a penetrating and disagreeable odor, exciting headache and coughing when its vapor is inhaled. It is sparingly soluble in water, though it mixes in all proportions with alcohol, ether, and essential oils. It is not easily inflammable, but burns with difficulty, giving a bluish flame. Its specific gravity, when pure, is .818, and boiling-point  $132^{\circ}$  C. Amyl alcohol is not acted upon by the atmosphere, except it be in a very thin layer, or under the influence of spongy platinum, when it is oxidized into valeric acid,  $C_5H_{10}O_2$ , which acid bears the same relation to amylic alcohol that acetic acid,  $C_2H_4O_2$ , does to ordinary alcohol. Fusel oil, as met with in commerce, is usually a clear yellowish liquid, with a peculiar penetrating odor, varying, of course, with the substance from which it has been produced. It has a specific gravity of from .840 to .850, and is largely contaminated with the lower alcohols of this series; so far as my experience goes, it is only about half pure amyl alcohol. As I have before stated, it is of the utmost importance, in the preparation of nitrite of amyl, that the amylic alcohol be as pure as possible, for it is much easier to purify this than to purify the nitrite produced from it in its impure state. For this purpose, the best process is first to agitate the fusel oil with about an equal bulk of a strong solution of chloride of sodium; this usually reduces its bulk about 16 or 20 per cent., and also considerably lowers the specific gravity. This washed product is separated and introduced into a retort furnished with a thermometer; that portion of the distillate which passes over before the temperature reaches  $125^{\circ}$  C. consists mainly of the lower alcohols of this series, and whose boiling-points are below that of amylic alcohol, for the boiling-point rises in proportion as the compound is richer in carbon. The distillate collected between  $125^{\circ}$  C. and  $140^{\circ}$  C. is collected apart, and redistilled until it has a boiling-point near  $132^{\circ}$  C.; this may then be considered pure enough for our purpose. This is then introduced into a glass retort containing some copper wire, and furnished with a safety-tube, and one-tenth its bulk of  $H_2SO_4$  added. The same quantity of  $HNO_3$ , diluted with an equal volume of water, is next put in, and a very gentle heat applied until the temperature reaches about  $65^{\circ}$  C., when the reaction will commence and proceed in a perfectly manageable manner, until a bulk about equal to double the quantity of  $HNO_3$  added collects in the receiver; the temperature in the mean time rises to about  $98^{\circ}$  C. The reaction ceases very quickly,

as in the case of spirit of nitrous ether. The temperature having fallen somewhat, another portion of  $\text{HNO}_3$ , equal in bulk to the first, is added, and this process of successive additions of the acid continued until nearly the whole of the amylic alcohol is exhausted, which may be known by the dense red fumes evolved from the retort. The distilled product exceeds in bulk the amylic alcohol used, and is the impure nitrite of amyl. This is washed with solution of  $\text{NaHO}$  to remove the  $\text{HCN}$  and other free acids present, and rectified over fused  $\text{K}_2\text{CO}_3$  to get rid of moisture. The portion which distils between  $95^\circ$  and  $100^\circ \text{C}$ . is collected as nitrite of amyl, sufficiently pure for medicinal use.

It has several times been stated that nitrite of amyl produces violent headache, and also coughing and irritation of the larynx; this, I think, must be due to its insufficient purification. The presence of  $\text{HCN}$  and undecomposed amylic alcohol would, I think, account for this; no such effect was produced on myself with the purified nitrite. Mr. Umney has shown, in an article in the *Pharmaceutical Journal* of November, 1870, that the samples then met with were very impure.

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### ON THE PREPARATION OF NEUTRAL SULPHATE OF ESERINE.

BY M. A. PETTIT.

M. PETTIT having had numerous calls from oculists for this salt, and having had great difficulty in procuring it, devised after considerable experimentation the following method of preparing it:—

A hydro-alcoholic extract is first prepared. This is then dissolved in a sufficient quantity (about 4 parts) of distilled water and the solution filtered. The little matter left on the filter contains no alkaloid. One gramme of bicarbonate of potash for every 20 grammes of extract is then added to the liquid, which is afterwards shaken with ether in excess. This ether takes up nearly all the alkaloid, and is of course readily removed after a few moments' repose, by pouring or the pipette. A little distilled water is then added, and afterwards sulphuric acid, drop by drop; the liquid being agitated after each drop and tested with litmus paper until it is exactly neutral. After standing the aqueous solution is readily separated from the ether, which no longer contains eserine. This ether is then again agitated with the first solution and takes away more of the eserine. It is then separated and added to the neutral aqueous solution of the sulphate, and more sulphuric acid dropped in as before until the neutral point is reached, when the ether is removed as before. This treatment with ether should

be repeated three or four times, to exhaust the solution. The aqueous solution obtained contains a moderately pure alkaloidal salt, but to obtain the latter pure the aqueous solution should be put through the same process as the original solution of the extract. A sulphate of eserine may be obtained by evaporation in the form of prismatic crystals, but usually the evaporation is only practised sufficiently to expel from the solution the little remaining ether. If enough water be added to the solution to make as many grammes as drops of sulphuric acid (str. 40 grs. monohydrated acid.  $(SO_3HO)$  to a litre) each gramme represents one centigramme of eserine. A drop or two of a collyrium of this (1 part to 9 of water) acts very promptly on the pupil.—*L'Union Pharmaceutique*, Nov., 1871.

## ON THE PREPARATIONS OF ACONITE.

BY M. DUQUESNEL.

In this paper the author gives the following table as the result of his chemical examination of preparations made in accordance with the French codex:—

Preparations Analyzed.	Crude Aconitia.	Purified but not absolutely pure Aconitia.
Aqueous extract of the leaves (depurated juice), 15 grammes.....	0.004	Traces only.
Same extract as it occurs in commerce (prepared in vacuo), 15 grammes.....	0.073	0.045
Hydro-alcoholic extract of the leaves (prepared in vacuo), 15 grammes.....	0.115	0.055
Alcoholic extract of leaves of alcoolature, 15 grammes representing 800 grammes of alcoolature.....	0.112	0.052
Extract of the tincture of the leaves, 15 grammes, representing 200 grammes of tincture.....	0.124	0.055
Alcoholic extract of selected roots (prepared without access of the air), 15 grammes.....	0.45	0.42
Same as it occurs in commerce, 15 grammes (without access of air).....	0.135	0.085
Same as in commerce (not prepared in vacuo), 15 grammes	Traces only.	Traces only.

From this table it is evident that the most powerful preparation is the carefully-prepared extract of the root; and that when this is carelessly prepared and not in vacuo it is nearly inert.

M. Duquesnel conceives, and the Editor of N. R. agrees with him, that all preparations of aconite should be abandoned except a tincture and extract of the root. The tincture he proposes the following formula for:—

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Take of Selected roots of *aconitus napellus*, 1 part.

Alcohol of 90 degrees, 5 parts.

Pulverize the root finely in a covered mortar and macerate 8 days, with frequent agitation.

The following formula he proposes for the extract:—

Take of Powdered selected roots, q. v.

Alcohol of 90 degrees, q. s.

After exhaustion of the aconite by three successive macerations of three days each, with expression of the residue after each maceration, the tinctures are to be put together and evaporated in vacuo to the consistence of a hard extract, at a temperature not exceeding 60° C. The drug yields from 15 to 20 parts of this extract for the 100 parts. 1 to 2 centigrammes, and even 3 centigrammes of the extract may be given during the 24 hours. 1 centigramme equals 2 milligrammes of the crystallized aconitia.—*Bulletin Général de Thérap.*, Dec. 15, 1871.

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### VARNISH FOR PILLS.

BY A. F. HASELDEN.

In the Conference "Year-Book of Pharmacy" for 1870, at page 53, may be found the following form for a pill-varnish, viz.:—Ether, 100 parts; *balsam* of tolu, 10 parts; colophonium, 1 part; absolute alcohol, 10 parts: macerate until the resin is dissolved. The tolu balsam must be previously digested four hours in hot water, and then dried and added to the rest. The mode of coating is by putting the granules with sufficient of the varnish, which is found out by practice, into a shallow circular porcelain evaporating-dish, and quickly shaking them round. The process of drying may be quickened by throwing them into a sieve, and keeping up the rotatory motion. Pills in large quantities in the same way; in small quantities, in pots having an egg-shaped bottom. I have employed a similar varnish for several years, but I simplify the form for preparing the solution. In the first place, I omit the colophony, or resin, as being neither necessary nor agreeable; and, instead of digesting *fresh* balsam of tolu in hot water, I take the resin of tolu, the waste product after preparing the syrup. I use less ether and more alcohol, thereby obtaining a less costly result, and one equally good,—the only advantage of a large quantity of ether being the drying of the varnish in a shorter time; but, for general purposes, I find it dries quickly enough. If very rapid drying be necessary, methylated chloroform is the best solvent. My proportions are the following:—Resin of tolu, 3 parts; rectified spirit, 6 parts;

methylic ether, 2 parts: well shaken until all that will is dissolved. Use the clear solution. Iodide of iron pills are well preserved by this coating, and also granules of *secale cornutum*, as suggested by Dr. Skinner, of Liverpool. For preserving *secale* in a portable state the plan is good; for, if there should be any difficulty in swallowing the granules, they can be readily crushed into a coarse powder and taken with water. I have also employed this solution as a liquid-stopping for the teeth, applied by means of cotton-wool, and have found it more manageable and less disagreeable than the various solutions of mastic. If it could be deprived of color and odor without destroying its adhesive quality, it would be better still. I have tried for this, but, at present, without success.—*London Pharm. Journ.*

## METHODS FOR PREPARING PURE CARBOLATE OF POTASH.

BY M. RAMEL.

CARBOLATE of potash may be prepared by mixing together alcoholic solutions containing 94 parts of carbolic acid and 56 parts of caustic potash, and evaporating. Upon cooling, a crystalline mass, composed of small, very thin, transparent, micaceous plates, is deposited. Dried over sulphuric acid, the product consists of carbolate of potash in a very pure state.

This salt may also be prepared by fusing together 37.4 parts of caustic potash and 62.6 parts of carbolic acid, the caustic potash being added gradually.

In whatever way prepared, carbolate of potash absorbs humidity from the air, turning first yellow and afterwards brown. It is very soluble in water and alcohol, less so in ether. It contains no water of crystallization, but it retains the water of composition of its respective constituents, which cannot be separated without decomposition of the salt.

The author states that this compound is being increasingly used in French medicine, and that as a disinfectant it advantageously replaces carbolic acid itself.—*London Pharm. Journ.*

## ANTHEMIC ACID.

M. CAMBOULISES advises the following plan of isolating the acid of *anthemis nobilis*:—

Treat dried chamomile flowers in a displacement apparatus with ether free from alcohol, evaporate the tincture in a water-bath to the con



sistence of an extract; treat with boiling distilled water, filter warm, let it stand for twenty-four hours, filter afresh to separate the insoluble part, evaporate the filtrate to dryness, redissolve the residue in ether, and leave it to evaporate spontaneously.—*London Pharm Journ.*, Jan. 13, 1872.

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**Gum-Arabic of Soudan.**—According to an article in the *Bull. de la Soc. de géographie*, p. 33, 1871, the Soudan gum exudes spontaneously from natural cracks and fissures in the bark, and is most abundant and of best quality in long dry seasons. It is well known that when the Nile inundations have been very full and long it is very difficult to obtain the finest gum—the reason being that great inundations are caused by abnormally wet seasons in the Soudan gum country.

**Preparation of Crystalline Indigotine by Means of Carbo-lic Acid.**—M. C. Mehu states that carbo-lic acid will dissolve the blue coloring matter of indigo freely when hot, depositing it in the form of beautiful crystals on cooling. To keep the acid liquid when cool a little alcohol may be added, which precipitates nearly all the coloring matter. Camphor may be employed for the same purpose, as it liquefies carbo-lic acid just as it does crystallized acetic acid and benzoic acid. One part of the camphor to 15 by weight of the carbo-lic acid is the proper proportion.—*Journal de Pharmacie et de Chimie*, December, 1871.

**Vanilla Crystals.**—Carles has made some new experiments upon the vanilla crystals and finds that they contain a new acid. The crystals were repeatedly dissolved and recrystallized until they were obtained as colorless, transparent prisms, of a sharp taste and light odor, which became stronger on heating. Their melting point is between 80° and 81° C., and they can be sublimed at 280°. They are readily soluble in alcohol, ether, chloroform, sulphide of carbon, fixed and volatile oils, and also in hot water; cold water scarcely affects them. They have a marked acid reaction and decompose the alkaline carbonates. On treatment with concentrated sulphuric acid they become yellow. If the sulphuric acid contains any nitric acid a beautiful red is developed. Concentrated sulphuric acid changes them into oxalic acid. Bromine and chlorine develop a brown color. Oxy-salts of iron color them blue, acetate of lead precipitates them, and nitrate of silver when warm is reduced by them. Their formula is  $C_{12}H_8O_4$ .—*Zeitschrift des Allgem. Apot.-Vereines*, Dec., 1871.

### Losses Sustained by Different Substances in Drying.

			HEATED TO REDNESS.	
<i>To the Druggists' Circular :</i>			29 gra. oxide of silver leave 27 gra. metallic silver.	
100 grains of—	Dried at	Loss grains.	10 gra. oxal. of cerium leave 4.8 gra. oxide with peroxide.	
Acid Gallic .....	212°	9.5	100 gra. ferri oxal. leave 27 gra. peroxide of iron, $\text{Fe}_2\text{O}_3$ .	
Quiniaz Sulph.....	212°	14.4	50 gra. ferrum tart. leave 15 gra., after washing, of $\text{Fe}_2\text{O}_3$ .	
Sodæ Arsenias.....	300°	40.38	20 gra. lithiæ carb. leave 10.6 gra.	
Alum.....	400°	47.	50 gra. magnes. carb. leave 22 gra. magnesia, $\text{MgO}$ .	
Sodæ Carbonas... (Dull redness)		63.		
Phosphas.....	"	63.		
Sulphas.....	"	56.		
Potassæ Carbonas....	"	16. ab't		

PHILADELPHIA, March, 1871.

MICHAEL J. CUMMINGS.  
—*Druggists' Circular.*

### DUTIES OF AN APOTHECARY IN THE OLDEN TIME.

As indicating how defined the duties of an apothecary were even in the sixteenth century, the following quaint rules for an apothecary's life and conduct deserve quotation:—

1. Must fyrst serve God, forsee the end, be clenly, pity the poor.
2. Must not be suborned for money to hurt mankynde.
3. His place of dwelling and shop to be clenly, to please the sences withal.
4. His garden must be at hand, with plenty of herbes, seedes, and rootes;
5. To sow, set, plant, gather, preserve, and keep them in due tyme.
6. To read Dioscorides to know ye nature of plantes and herbes.
7. To invent medicines, to choose by coloar, taste, odoar, figure, &c.
8. To have his mortars, stilles, poltes, filters, glasses, boxes, clene and sweette.
9. To have charcole at hand to make decoctions, syrups, &c.
10. To keep his cleane ware close and cast away the baggage.
11. To have two places in his shop, one most cleane for the physick, and a barer place for the chirurgerie stuff.
12. That he neither increase or diminish the physician's file (*i. e.*, prescription), and keep it for his own discharge.
13. That he neither buy nor sell rotten drugges.
14. That he peruse often his wares, that they corrupt not.
15. That he put not in *quid pro quo* (*i. e.*, use one ingredient in place of another when dispensing a physician's prescription) *without advisement.*

16. That he may open well a vein for to help pleurisy.
17. That he meddle not in his vocation.
18. That he delight to reade Nicolaus Myrepsus, Valerius Cordus, &c.
19. That he do remember his office is only to be physician's cooke.
20. That he use true weight and measure.
21. To remember his end and the judgement of God ; and thus do I commend him to God, if he be not covetous and crafty, setting his own lucre before other men's help, succour, comfort, &c.

*Dr. D. Campbell Black*: An Address on the Relations of Prescriber to Dispenser, before the Glasgow Chemists' Association.—*Pharmaceutical Journal*, April, 1871.

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## ERYTHROCENTAURIN IN AMERICAN CENTAURY.

BY JOHN F. HUNEKER.

THIS principle was discovered in European centaury (*Erythraea Centaurium*), a few years ago, by Méhu, a French chemist, who obtained it in the minute quantity of one grain in three thousand grains of the herb. The question very naturally arose, whether American centaury (*Sabbatia angularis*) also contained this principle ; the experimenter will prove that it may be obtained.

The flowers and leaves of *Sabbatia angularis* to the amount of two pounds were exhausted with one gallon of water, a portion of which was evaporated by a water bath, and allowed to stand to deposit the apotheme. This was separated by filtration, and strong alcohol added to the filtrate, which precipitated gum. On again filtering, the infusion was evaporated to the consistence of a syrup, and, on cooling, washed with strong ether, which took up erythrocentaurin and deposited it on spontaneous evaporation. Erythrocentaurin, as thus obtained, is a non-nitrogenous principle, in small acicular crystals, which are transparent, but in this case were contaminated with yellow coloring matter, and, being in such a small quantity, the experimenter feared losing them in decolorizing.

The crystals have a sharp acrid taste, reminding one of tobacco, and are soluble in alcohol, ether, water, alkalies in solution and acids, but insoluble in fixed and volatile oils, being also slightly volatilized by heat.

The only proofs that they are similar to erythrocentaurin of the European centaury are:—First, that they exist in the same minute quantity ; second, that they are *reddened* by solar light, but if dissolved and recrystallized, regain their original color. Therefore there is not a doubt but that these principles are similar in composition and character.

**Solvent Powers of Glycerine.**—The following table marks the quantity soluble in one hundred parts of glycerine:—

Arsenious acid.....	20	Acetate of morphia.....	20
Arsenic.....	20	Muriate of morphia.....	20
Benzoic acid.....	10	Phosphorus.....	0.20
Boracic acid.....	10	Acetate of lead.....	20
Oxalic acid.....	15	Arsenate of potash.....	50
Tannic acid.....	50	Chlorate of potash.....	3.50
Alum.....	40	Bromide of potassium.....	25
Carbonate of ammonia.....	20	Cyanide of potassium.....	32
Muriate of ammonia.....	20	Iodide of potassium.....	40
Tartarated antimony.....	5.50	Quinia.....	0.50
Atropia.....	3	Tannate of quinia.....	0.25
Sulphate of atropia.....	33	Arsenate of soda.....	50
Chloride of barium.....	10	Bicarbonate of soda.....	8
Brucia.....	2.25	Borate of soda.....	60
Sulphide of calcium.....	5	Carbonate of soda.....	98
Cinchona.....	0.50	Chlorate of soda.....	20
Sulphate of cinchona.....	6.70	Sulphur.....	0.10
Acetate of copper.....	10	Strychnia.....	0.25
Sulphate of copper.....	30	Nitrate of strychnia.....	4.
Tartarated iron.....	8	Sulphate of strychnia.....	22.50
Lactate of iron.....	16	Urea.....	50.
Sulphate of iron.....	25	Veratria.....	1
Perchloride of mercury.....	7.50	Chloride of zinc.....	50
Cyanide of mercury.....	27	Iodide of zinc.....	40
Iodine.....	1.90	Sulphate of zinc.....	35
Morphia.....	0.45		

Mr. Klever, in *Pharm. Zeits. für Russ.*, quoted in *Pharmaceut. Transactions*.

**Theine.**—Mr. Lewis Thompson asserts that in the ordinary process of roasting coffee all the theine is driven off, and states that about 140 tons of theine is thus lost every year in England by ignorance. He proposes to collect the impure theine by having the cylinder axis at one end of the tubular roaster pass off for three feet as a tube, in which, if kept cool, the theine will be deposited. In regard to purification of theine, he says: "Theine is absolutely insoluble in a concentrated solution of carbonate of potash, and thus we may precipitate it from its admixture with sugar, mucilage, and vegetable extract. If, then, by means of the subacetate of lead, the tannin, malic acid, etc., have been removed from a vegetable infusion, and the filtered solution be evaporated to a small bulk and its weight of carbonate of potash be added, the theine falls. This must be boiled in spirits of wine until dissolved, and then on evaporation the crystals fit for immediate use separate." As a distinctive test, sufficient to detect a thousandth of a grain, dis-

solve the theine in a small quantity of water, and pass through this a stream of euchlorine, then allow the fluid to evaporate at a steam heat; a blood-red substance will remain, which, on the application of a few drops of cold water, forms a beautiful scarlet solution. Euchlorine is formed by action of hydrochloric acid upon chlorate of potash. In a dose of one to five grains, Mr. Thompson states he has found theine very useful in typhoid states of the system. As made by himself from coffee waste, purified theine has cost only threepence per ounce, *troy*.—*Medical Times and Gazette*, Feb. 27, 1871.

**On the Resin of Tampico Jalap.**—Prof. A. Spirgalia, of Königsberg, read a paper on the resin of Tampico jalap (the product of *Ipomœa simulans*, *Hanbury*, Linn. Soc. Trans., vol. xi.) before the Munich Academy of Sciences, from which the following facts are taken: He gives the name of Tampicin to the resin, which he obtained by making a tincture, evaporating, washing, and boiling the residuum in water, redissolving in alcohol, and decolorizing by charcoal. Its physical properties are similar to those of the resin of ordinary jalap (convolvulin). In section it is colorless or yellowish, brittle, tasteless, and without odor, soluble in ether and alcohol, and its solutions have a feeble acid reaction. By strong alkalis it is changed into an acid soluble in water, Tampicic acid. By dilute sulphuric, nitric, and hydrochloric acid, it is slowly changed (rapidly by aid of heat) into a fat-like acid, Tampicolie acid, and sugar. In concentrated sulphuric acid Tampicin becomes first yellow, then dissolves with a beautiful red color, passing at last into yellow; if water be added to this concentrated solution, sugar and Tampicolie acid are formed. Towards concentrated nitric acid the behavior of the resin is that of convolvulin. Its alcoholic solution is not affected by ordinary metallic salts. If kept a long time melted, it finally gives off a peculiar odor, turns yellow, then brown, and even at a temperature of 100° C., if long-continued, undergoes a peculiar decomposition. By quick heat it can be dried at 100° C. Its melting point is 130° C. Its formula  $C_{12}H_{14}O_{11}$ .

Tampicic acid is best made by dissolving the pure resin in baryta water, precipitating the baryta by sulphuric acid, separating the latter by sugar of lead, precipitating the dissolved lead by sulphuretted hydrogen, evaporating and purifying by re-solution. It is a yellowish, translucent, brittle, amorphous substance, without odor, and of a sour, bitter taste; freely soluble in water and alcohol, but only yielding a trace to ether. Salts of the alkalies—sulphate of copper, silver, cadmium, and zinc, or chloride of platinum—alter its solution. Acetate of lead makes a whitish cloudiness, a dense flaky precipitate.

Its formula is  $C_{11}H_{12}O_{11}$ , so that it is formed out of resin by addition of 3  $H_2O$ . The formula of Tampicollic acid is  $C_{11}H_{12}O_{11}$ . It can be made by simply digesting Tampicin some days with sulphuric acid. The acid is left as yellowish flakes and granules, the sugar remaining in solution. It is odorless, of a sharp acid taste, soluble readily in alcohol, with difficulty in water. By warmth it becomes an oily, slightly yellowish fluid, hardening on cooling into a white, hard, radiatingly crystalline mass. At a higher temperature it gives off whitish, irritating fumes.—*Sitzungsberichte der königl. bayer. Akad. der Wissenschaften zu München*, 1870.

**Discovery of Carbolic Acid.**—In the *Journal of Applied Chemistry* for April, 1871, Prof. Chas. A. Joy writes as follows:—

On the 8th of February, 1795, there was born a child near the city of Hamburg, to whom was given the name of Friedlieb Ferdinand Runge. He was a youth of promise, and in course of time passed through his University studies, was a tutor at the University of Berlin, then resided for a long time in Paris, afterwards was Professor of Technology at the University of Breslau, and finally returned to Berlin to receive a pension and to give some services to the naval department of Prussia. This man was an industrious chemist, and among other important researches he published in Poggendorff's *Annals* for 1834, an admirable paper on the products of the distillation of coal, in which he gives an account of the properties of certain acid compounds, particularly of one which he called carbolic acid or carbon oil acid. In this original publication Runge describes some of the leading properties of carbolic acid, and suggests many of the uses to which, after the lapse of nearly forty years, it is now applied. Other chemists took the subject in hand, especially Laurent, and it was then that new names began to be suggested for the acid. We will mention some of these names, and our readers can then understand why so much confusion has obtained in reference to what is, in fact, a very simple and easily understood body. The various names are: Carbolic acid (1834), phenylic acid (1840), phenylous acid, hydrated oxide of phenyl, phenylic alcohol, phenol, phenous acid, phenic acid, phenolic acid, spirol, salycon, coal tar creosote, carbon oil acid, etc. Each one of these names suggests a laborious research, running over a term of years, and published in the leading English, French, and German journals since 1834.

**Saccharate of Lime.**—Dr. Schwan has proposed this salt as a portable substitute for lime-water. It is prepared by adding alcohol to a strong solution of slaked lime in syrup. The precipitate is fairly soluble in water, and the solution has a less nauseous taste than lime-water.—*Prof. Attfield, Chemical and Druggists' Almanac*.

**The Leech Trade.**—One of the trades carried on in the Landes, south of Bordeaux, in France, is that of propagating leeches in the meres near the bay. Formerly the custom was to use miserable worn-out horses; but these poor animals were found by the propagator to wear out too soon—the veins opened by the leeches did not heal; and so the life's blood could not be renewed. Now, the cow has to do duty as nurse to the young annelides. Frightened, haggard, but resigned, the animal submits, with a stupid kind of astonishment, to the attacks of clusters of leeches hanging on her legs; and when the moment of utter exhaustion comes she is sent off to her pastures to renew life, and furnish a fresh repast. Two weeks suffice for each process, alternately carried on, until death puts an end to this being eaten in detail. The owner of about eight acres of marsh supplies yearly two hundred cows for the nourishment of eight hundred thousand leeches: he buys the animal for about two pounds, and sells the carcass for sixteen shillings. The ass is sometimes employed, but it proves to be less resigned than the more patient cow; it kicks, prances, and tries to bite; and when at length it falls into the water under the storm of its numerous enemies, it becomes mad with terror. That this culture of leeches forms an important branch of trade to the inhabitants of the Bay of Arcachon, may be believed when it is known that a million and a half of leeches are annually exported to Bordeaux.—*Ch. and Druggist.*

**California Castor-Oil.**—The Marysville *Appeal* has the following account of a recent visit to the castor-oil manufactory of Dr. McDaniel, situated in Marysville: "Being a novice in the preparation and pressing of the castor-bean, and the process employed to produce the pure oil, we were surprised at the simplicity of the machinery and everything connected with the *modus operandi*. The beans are first subjected to a dry heat of an hour or so in a furnace. This softens them and brings them to that peculiar state required in expeditious pressing. They are then taken out and placed in a screw-press, run by horse-power, and capable of pressing between 80 and 100 gallons of oil per day. From the press the oil is conveyed into a vessel, and from thence into a large iron tank or boiler. In this is placed 60 gallons of oil and the same amount of water, the latter serving to cleanse the oil of all impurities. The oil is then boiled about an hour, and kept standing until the next morning, when the water is drawn off and the oil transferred to the clarifiers, which are composed of zinc, and are capable of holding from 60 to 100 gallons each. After standing about eight hours in the sun, it is taken out and put into cans, and is ready for the market. Beans of a

superior quality are worth about \$90 per ton, and 100 pounds are supposed to produce 5 gallons of oil."

**Magnificent Fluorescence of Peppermint Oil.**—Prof. Pflückiger, in the *Pharmaceutical Journal and Transactions*, says, fifty to seventy drops of peppermint oil shaken with one drop of nitric acid (1.2 sp. gr.), turn faintly yellowish brownish, and after an hour or two exhibit a most beautiful blue, violet, or greenish blue color, when examined in (transmitted) light. When observed in reflected light the liquid is of a copper color, and not transparent. The coloration may be made immediate by warming or using a larger quantity of nitric acid (gtt. 10–19). All specimens of the oil which the professor has tried responded perfectly to the reaction, except a very old sample of English manufacture. The color is very persistent, lasting a week or two in the cold. Five per cent. of turpentine in the oil does not interfere with the reaction. The only other oil, which behaves at all similarly is carbol, the lighter portion of oil of caraway, but its coloration is very much less pure and intense.

**The Size of the Drop of Different Fluids.**—Dr. Cotting recently presented to the *Obstetrical Society of Boston* the subjoined results of experiments made for him by a reliable apothecary, the object being to ascertain the size of the drop of different fluids; the experiment consisted simply in letting thirty drops fall into a minim glass, and measuring the number of minims.

		When dropped from a—		
		Shop-bottle.	1-oz. vial.	4-oz. vial.
30 gtt. tinct. opii,	=	15 min.	20 min.	15 min.
(2d trial),	=	15 "	15 "	15 "
30 gtt. tr. aconit. rad.,	=	15 "	17 "	17 "
(2d trial),	=	14 "	12 "	15 "
30 gtt. vin. colch. rad.,	=	20 "	20 "	20 "
(2d trial),	=	20 "	20 "	17 "
30 gtt. filt. rain-water,	=	30 "	30 "	80 "

—*Boston Med. and Surg. Journal.*

**Tuba Root.**—The roots of a plant known in Borneo by the name of tuba or tooba are much valued in that country for destroying vermin on plants and animals. They are thrown into water and allowed to stand a short time, after which the animals or plants are washed with the water. It is said that the infusion is very deadly to the vermin, but innocuous to the plant and animals. The roots are used whilst fresh, and are believed to lose their properties in drying.



They are also used constantly for poisoning fish and pools. The plant is one of the Leguminosæ.—*The Gardener's Chronicle*.

**On the Estimation of Acetic Acid in Acetate of Lead.**—Two kinds of acetate are offered by manufacturers: the one compact and very heavy, the other loose and crystalline; occasionally a mixture of the two appears. The former is more basic and cheaper. In estimating the amount of acetic acid, the following process has been found satisfactory:—

In a flask of about 12 ozs. capacity 100 grains of sample are dissolved in 4 ozs. of distilled water, by the aid of gentle heat; litmus solution is then added, and a standard carbonate of soda solution added very gradually. It might be supposed that the presence of a precipitate would obscure the reaction, but it does not; one drop of the carbonate of soda solution in excess changes the color from the purplish neutral tint of litmus to a pale blue.—*Chemical News*.

**Artificial India Rubber.**—Pro. Sonnenschein has discovered that an elastic mass resembling caoutchouc may be obtained by combining tungstate of soda with certain organic substances. If tungstic acid or tungstate of soda be added to glue, and afterwards muriatic acid, a compound of tungstic acid glue is precipitated, which is so elastic at 85° to 105° F. that it can be drawn out into very thin fibres. On cooling the mass becomes very solid and brittle. It is proposed to employ this substance in place of the costly albumen for mordanting cotton, especially for aniline colors. The same substance has been used for tanning leather, which it makes as hard as stone. By adding tungstate of soda and muriatic acid to a solution of gelatine, and heating the precipitate, a substance is formed which may be used as a cement or putty.—*Manufacturers' Review*.

**Synthesis of Conia.**—According to the *Journal of Applied Chemistry*, H. Schiff has produced this alkaloid artificially by allowing alcoholic ammonia to act at 212° F. on butyric aldehyde, combining the substance thus formed with platinum, and distilling. The alkaloid obtained exactly corresponds physically, chemically, and physiologically with the native drug.

**Preservation of Meat, Vegetables, etc.**—In the *Moniteur Scientifique* for March, 1871, Dr. G. Declat describes a process of preserving both vegetable and animal food material, which is said to have been used successfully in Paris. It consists in soaking the substances in aqueous solutions of various strengths of pure carbolic acid, and then drying them.

**Fulmar Oil.**—By EDWARD C. C. STANFORD, F.C.S.—This oil is obtained in the following way on the Island of St. Kilda. The bird-catcher swings over the precipice by a rope, armed with a sort of fishing-rod having a noose attached to it. This he dexterously throws over the head of the bird as it sits on the rock, and hauls it to him. He then dips the bird's beak into a small leather bag attached to his waist, and there the oil is vomited. The bird itself is afterward eaten, its feathers and oil being exported. The bird lives on fish, and the oil is certainly a fish-oil, and possesses nearly all the properties of cod-liver oil. It is of a clear, dark, slightly reddish sherry color, and has a powerful, peculiar odor. Its sp. gr. is .902. It is soluble in ether. Cold alcohol dissolves 1 per cent. of it, hot alcohol 3 per cent.  $\text{SO}_2$  causes the ordinary biliary reaction with it. It saponifies with soda and contains a trace of iodine. Heated with oil of vitriol and excess of potash, it gives off a strong odor of rose.—*Proceedings of British Pharmaceutical Conference for 1870.*

**Researches on the Formation of Gallic Acid.**—In a paper in *Comptes Rendus* of June 19, M. Sacc points out that if the theory usually accepted for the mode of formation of gallic acid (which, according to Pelouze's experiments, has the formula  $\text{C}_6\text{H}_3\text{O}_6$ , and is derived from tannic acid simply by its splitting up into sugar and gallic acid in the presence of water) be correct, there ought to be obtained a smaller quantity by weight of gallic acid from a given quantity of tannic acid used. That this does not so happen has been proved already by Dr. Stenhouse, who found that tannic acid, while being converted into gallic acid, yields its own weight of the latter. The author of this paper having made a series of experiments on this subject, found that tannic acid, while being converted into gallic acid, increases considerably in weight, and concludes that hydration then takes place, and that accordingly tannic acid is the anhydride of gallic acid.—*Chemical News*, July 14, 1871.

**Quantitative Determination of Iodine.**—William Reinige proposes a new method for the quantitative determination of iodine, founded upon the decomposition of the permanganate of potash by iodide of potassium. As neither chlorine nor bromine exhibits the same reaction, this method would appear to be the best for the quantitative analysis of iodine compounds. Take a solution of an iodine salt, add a little sulphuric acid to neutralize the excess of alkali, or render slightly alkaline by means of carbonate of potash or soda; then heat to gentle boiling in a beaker-glass, and gradually add a solution composed of 2.5 grammes of permanganate of potash dissolved in 497.5 grammes of distilled water, until all of the iodide of potassium is decomposed. The

quantity of permanganate consumed will give the amount of iodine, for every gramme of it represents 2 milligrammes of iodine. The accuracy of the analysis is not destroyed by the presence of bromine or chlorine in the solution.—*Druggists' Circular*.

**On the so-called Ozone-ether.**—By DR. R. BÖTTGER.—The preparation commended by Dr. Richardson, under the name of ozone-ether, as a disinfectant, contains according to my observation no ozone, but is only an ethereal solution of peroxide of nitrogen. Ether saturated with this gas can very readily be prepared by shaking up hydrated peroxide of barium with ether in a glass vessel; then adding, little by little, pure, very dilute muriatic acid, the vessel being shaken from time to time and cooled, and finally allowing the whole to stand quiet so that the ether may separate from the concentrated solution of chloride of barium which has been formed; the upper ethereal layer may then be separated by carefully decanting, or by the use of the pipette.—*Vierteljahrsch. für Praktisch. Pharm.*, July, 1871.

**Method of Distinguishing Chloroform made from Chloral from that made by Alcohol and Chlorine.**—By Dr. HAGER.—According to Dr. Hager the chloral-chloroform has a specific gravity of only 1.485, and contains 0.75 to 0.8 per cent. of strong alcohol. When to the alcohol-chloroform strong sulphuric acid is added, it always becomes more or less colored, which does not happen with the other variety; and when a few drops of each kind is allowed to evaporate from a watch-glass, the alcohol-chloroform gives off, after a while, a peculiar disagreeable odor, whilst the chloral-chloroform retains its fruity smell until the last.—*Chemical News, from Polytechnisches Journal von Dingler*.

**Bromal.**—In a paper on the chemistry of bromal and its preparation, by Dr. L. Schaeffer, in the *Berichte der Deutschen Chem. Gesellsch. zu Berlin*, the following facts are brought forward. Bromal boils, without decomposition, at  $173^{\circ}$ , and is not congealed at  $-20^{\circ}$ . The hydrate of bromal fuses at  $53.5^{\circ}$ , cannot be distilled without decomposition, being converted into water and bromal. When absolute alcohol is added to bromal, bromal-alcoholate results. This is a crystalline solid, fusing at  $44^{\circ}$ , soluble with difficulty in water, readily in ether and alcohol. On distillation it breaks up into alcohol and bromal. The formula of the alcoholate is  $C_2Br_2OH + C_2H_5O$ .

**Tincture of Andol Andol—A New Vesicant.**—Dr. I. Roxburgh Wylie states that during a residence of three and a half years in Java he found the tincture of andol andol very largely used as a vesicant. He has used it himself constantly, and never knew it to fail. It is simply painted on the part, which has been previously

washed—first with soap and water, and then with vinegar,—and, drying in a few seconds, vesicates most effectually in two or three hours. It is prepared from a fly found in China in great abundance. The fly is imported from China, and is of a dull leaden color, about twice the size of the Spanish fly, and in general appearance not unlike the large Australian blow-fly.—*Australian Medical Journal*, March, 1871.

**Purification of Alcohol—Test of its Purity.**—In order to separate volatile odorous principles from alcohol, which has been recovered after use in making vegetable extracts, it is recommended to add, before distilling, permanganate of potash.

It is sometimes important to know whether alcohol is pure or not, especially for use with the aniline colors. The point can be determined by adding to the alcohol a piece of caustic potash. If any foreign matter be present, the alcohol will become more or less yellow; if it remain colorless, it is pure.—*Elsner's Chemisch-technische Mittheil.*

**Test for Purity of Olive Oil.**—Dr. R. C. Langlies has found the following test very useful to prove the absence of seed-oil, especially cotton seed: The reagent is first made by adding three parts of pure nitric acid at 40° to one part of distilled water; then three grammes of the oil to be tested is put with three grammes of reagent in a test-tube, and heated in a water-bath. If the oil be pure it becomes clearer and more yellow; if seed-oil be present it takes on the same transparency, but a reddish color. From 15 to 20 minutes suffice for the reaction.—*Journal de Pharmacie et de Chimie.*

**Hydrocyanate of Morphia.**—In a paper in the *American Journal of Pharmacy* Prof. Maisch shows that when a salt of morphia and a cyanide are put together in a neutral solution, a hydrocyanate of morphia crystallizes out; the presence, however, of even a small amount of a mineral acid, or of acetic acid, serves to hold the morphia salt in solution.

**English Rhubarb.**—Prof. I. Radius, of Leipzig (*Apotheker Zeitung*, vi. 18, 1871), strongly recommends English rhubarb as not inferior in its therapeutic action to Chinese, and much cheaper and of more uniform quality. He states that it is largely used in England, and is even exported in considerable quantities to Russia.—*Schmidt's Jahrbücher.*

**Paper Sinapism.**—Dr. J. Jeannel states that the paper sold under this name in England, and made by coating paper several times with strong tincture of euphorbium, and putting over this a coat of tolu by means of the ethereal tincture, is a very uncertain and worthless preparation, occasioning at first excessive pain and irritation, but losing in a few minutes its revulsive power.—*Bulletin Général de Thérap.*

**Bromide of Quinine.**—Bromide of quinine is formed by subjecting the alkaloid quinia to hydrobromic acid, or by acting on a salt of the alkaloid with bromide of potassium. The bromide of quinine is soluble, and mixed with a simple syrup, is ready for administration as a medicine. I prefer to employ it as a syrup containing one grain of it in every fluid drachm. The dose of this syrup is from one to four fluid drachms.

DR. RICHARDSON.

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**Reaction to Distinguish German and English Atropine.**—By H. BULLOT.—If to an aqueous solution of atropine acidulated with sulphuric acid an aqueous solution of picric acid be added, a precipitate will not form if the preparation be good English atropine; if the alkaloid has been obtained by the method of Simon, there will be a very slight precipitate; if a German alkaloid has been used, an abundant yellow precipitate will fall. This looks as though the German alkaloid was really composed of two alkaloids; but the fact that it acts upon the pupil precisely as the English does, and, unlike the belladonnine of Huebschmann, does not cause a painful feeling in the eye, make any such supposition doubtful.—*Revue de Thérapeutique Médico-Chirurg.*, August, 1871.

**New Test for Alcohol.**—Dr. Berthelot says that when benzoic chloride is put in contact with water it only very slowly decomposes; but if any alcohol be present (even 1 in 1000) benzoic ether is formed at once; this ether is set free by a drop of aqueous solution of caustic potassa, and is at once manifested by its peculiar odor.—*Journal de Pharmacie et de Chimie*, No. 3, Sept., 1871.

**Tanismic Acid as a Substitute for Santonin.**—M. Frosini Merletta proposes tanismic acid as a substitute for santonin, given as a vermifuge, in the same doses as the latter. It and its salts are all crystallizable. Its taste is bitter and acrid. It is insoluble in water, but soluble in alcohol and ether. M. Merletta prepares it by distilling the tops of tanacetum vulgare, evaporating the filtered residue to consistence of honey. Treated with chalk and animal charcoal, it is first dried, and then dissolved in water at first acidulated with muriatic acid, then with acetic acid. The tanismic acid is afterwards deposited in colorless crystals.—*Bulletin Général de Thérapeut.*, Nov. 15, 1871.

**Carlo Paresi's Method of Concealing the Taste of Cod-Liver Oil.**—Cod-liver treated in the following manner becomes amber-colored, and has the odor and taste of coffee. The fishy taste is almost entirely masked.

Take 400 parts of cod-liver,  
10 “ animal charcoal,  
20 “ roasted coffee (ground).

Mix them thoroughly in a glass matrass, and heat in a water-bath for quarter of an hour, to temperature of 50° to 60° C., taking care to stop the mouth of the matrass. Then take the mixture off the fire and allow it to stand for three days, shaking it occasionally. Then filter, and the oil is ready for use. It must be kept in well-stopped bottles.—*Bulletin Général de Thérap.*, Nov. 15, 1871.

**Bromohydrates of Quinine and Cinchonine.**—M. Latour has prepared neutral salts by the action of a solution of bromide of potassium upon a slightly acidulated solution of sulphate of the alkaloid. To prepare basic salts, the neutral sulphates are dissolved in a menstruum composed of equal parts of water and alcohol, and this solution is treated first with a very dilute water of ammonia, and afterwards with a solution of the neutral bromohydrate.—*Revue de Thérapeut. Medico-Chirurg.*, Nov. 1, 1871.

**Sugar of Milk in a Vegetable Juice.**—M. M. G. Bouchardat has discovered in the juice of the fruit of the sapota tree (*Achras Sapota*) a crystalline saccharine substance perfectly identical with the sugar obtained from the lacteal secretion of the mammifera.—*La Revue Scientifique*, Aug. 26, 1871.

**Quantitative Determination of Iodine.**—William Reinage proposes a new method for the quantitative determination of iodine, founded upon the decomposition of the permanganate of potash by iodide of potassium. As neither chlorine nor bromine exhibits the same reaction, this method would appear to be the best for the quantitative analysis of iodine compounds. Take a solution of an iodine salt, add a little sulphuric acid to neutralize the excess of alkali, or render slightly alkaline by means of carbonate of potash or soda; then heat to gentle boiling in a beaker-glass, and gradually add a solution composed of 2.5 grammes permanganate of potash dissolved in 497.5 grammes distilled water, until all of the iodide of potassium is decomposed. The quantity of permanganate consumed will give the amount of iodine, for every gramme of it represents two milligrammes of iodine. The accuracy of the analysis is not destroyed by the presence of bromine or chlorine in the solutions.—*Scientific American*.

**Acetic Ether.**—Alcohol in acetic ether is detected, according to Frederking, by agitating the ether with an equal volume of glycerine, which dissolves the alcohol only. For obtaining absolute acetic ether, the crude distillate containing water and alcohol may be treated to glycerine previous to rectification.—*Pharm. Zeitschr. f. Russl.*

**Sulphur in the United States.**—On the shores of the Mississippi, below New Orleans, two miles from the sea, in making an artesian boring, a stratum of pure sulphur, 100 feet thick, was discovered at the depth of 543 feet.—*Zeitschrift des Oesterr. Apothek. Vereins*, October 1, 1871.

**Adulteration of Coffee.**—Mr. Armand Muller received some green Rio coffee, which, when prepared in the usual way, yielded a decoction of such peculiar taste as to cause him to believe that it was adulterated. Close examination showed that it contained some 27 per cent. of beans, whose outward appearance was precisely that of the coffee bean, but which, when moistened, swelled up into soft irregular masses. Chemical examination showed they were imitation beans made out of bread, probably fresh, pressed into form and colored.—*Chem. Central-Blatt*, iii. Folge, ii. Jahrg. No. 37, s. 389.

**Determination and Characteristics of Citric Acid.**—By H. KÄMMERER.—Soluble citrates mixed with acetate of baryta, either hot or cold, produce a white amorphous precipitate, being  $3 \text{ BaO}$ ,  $2 \text{ C}_{12}\text{H}_4\text{O}_{11}$ ,  $3 \text{ H}_2\text{O}$ ,  $+14 \text{ aq.}$

If, after precipitation, an excess of acetate of baryta be added, and the mixture heated in a water-bath, the precipitate becomes heavy and granular, it loses one-half of its water of crystallization, and has now the composition  $3 \text{ BaO}$ ,  $2 \text{ C}_{12}\text{H}_4\text{O}_{11}$ ,  $3 \text{ H}_2\text{O} + 7 \text{ aq.}$

The presence of other organic acids does not interfere; the granular salt is absolutely insoluble in water, and citric acid may thus be easily determined. If the solutions are very dilute they must be concentrated by evaporation, after additions of acetate of baryta, or the precipitate will consist of crystalline needles containing only 5 aq.—*Zeitschr. für Analyt. Chemie*, viii. p. 298. *Pharmaceutical Journal and Transactions*.

**Oil of Andromeda Leschenaultii.**—According to Mr. Broughton, the herb *Andromeda Leschenaultii* grows in great profusion on the Neilgherry hills of India, and its oil can be produced at small cost and in inexhaustible quantity. The oil is almost identical with that of *Gaultheria procumbens*, but is finer. Carbolic acid of absolute purity is readily prepared from it.—*Pharmaceutical Journal*, October 7, 1871.

**Freezing-Point of Mixtures of Glycerin and Water.**—

The freezing-point of mixtures of glycerin and water has been examined by C. Budock. The glycerin used was the common commercial article, of a specific gravity=1.250 :—

One gallon of water with $\frac{1}{2}$ a pint glycerin freezes at.....	80° F.
One gallon of water with 1 pint glycerin freezes at.....	24°
One gallon of water with $1\frac{1}{2}$ pint glycerin freezes at.....	18°
One gallon of water with 2 pints glycerin freezes at.....	10°
One gallon of water with 3 pints glycerin remains fluid at.....	3°

—*Journal of Applied Chemistry*, November, 1871.

**Newton's (English) Process of Extracting Hops.**—The process is based upon his discovery that the light products of petroleum, naphtha, etc., are rapid and complete solvents of the essential oils and of the bitter principle of hops, while at the same time they have no solvent action on the other constituents of the plant, which are either useless or hurtful. The hops are simply steeped in the naphtha, under a moderate heat. The apparatus employed is similar to that used for bisulphide of carbon when employed for similar purposes. The lighter hydro-carbons, which boil at 100° Fahr., are preferable for this purpose.—*Boston Journ. of Chemistry*, Dec., 1871.

**Yellow Glass for Bottles.**—In the *Zeitschrift des Allgem. Oesterr. Apoth. Vereins* of Nov. 1, yellow glass is commended for containing mixtures, etc., liable to be acted on by light. The absolute want of chemical power of yellow rays has long been known, and bottles made of such colored glass are much handsomer and show any dirt or sediment much more plainly than when black or very dark blue glass is employed.

**Method of Detecting Fat Acids in Oils.**—By M. JACOBSEN.—The oil suspected is to have rosaniline dissolved in by aid of the heat of a salt-water bath.

If a neutral oil be pure its color remains unchanged; if it be rancid it changes to a pale red; if it contain oleic or other fatty acid the color becomes very deep.

This reaction is chiefly valuable in testing the purity of olive oil and almond oil.—*L'Union Pharmaceutique*, Nov., 1871.

**Incompatibles with the Perchloride of Iron.**—The following list is given (*L'Union Pharmaceutique*) by M. Bouilhon :—

Salts of silver; protosalts of mercury; alkalies, their carbonates and bicarbonates; the arsenites and arseniates; borate of soda; tannin and vegetable astringents; gums; vegetable extracts and vegetable infusions; albumen; casein.



**Purgative Principles of Senna.**—In *L'Union Pharmaceutique*, Nov., 1871, is a paper of some length on the Chemistry of Senna, by Bourgoies and Bouchut, in which they arrive at the conclusion that there is in it at least two purgative principles besides *chrysophanic acid*. One of these is *cathartic acid*; the other a matter, probably complex, obtained first by Lassaigne and Feneulle, and improperly called *cathartine*.

**Benzol to Distinguish from Benzine.**—Mr. J. Brandberg states that benzol may be distinguished from benzine by the fact that it dissolves pitch with great readiness, whilst benzine only does so with great difficulty.—*Pharmaceut. Zeitschrift für Russland*, Nov. 6, 1871.

### Strength of Wines.

MR. BRANDE'S TABLE.

*Rectified Spirit (.825 density) by volume in 100.*

Scotch Whiskey.....	54.32	Mean.....	20.85	Burgundy—	
Irish Whiskey.....	53.90	Weakest.....	18.40	Strongest.....	16.00
Rum.....	53.68	Constantia, white.....	19.75	Mean.....	14.57
Brandy.....	53.39	Lachryma Christi.....	19.70	Weakest.....	11.95
Hollands.....	51.60	Sherry—		Tincture.....	14.23
Life Wine—		Strongest.....	19.89	Barsal.....	12.86
Strongest.....	36.47	Mean.....	19.17	Champagne, still.....	13.30
Mean.....	25.41	Weakest.....	18.25	sparkling.....	12.60
Weakest.....	24.45	Vidonia.....	19.25	Tent.....	12.30
Marsala Wine—		Lisbon.....	18.94	Rives Altes.....	12.73
Strongest.....	26.03	Bricellaa.....	18.49	Vin de Grave—	
Mean.....	25.09	Constantia, red.....	18.92	Strongest.....	13.94
Weakest.....	24.05	Calcavada—		Mean.....	13.37
Raisin Wine—		Strongest.....	19.20	Weakest.....	12.80
Strongest.....	26.40	Mean.....	18.65	Côte Rôtie.....	12.23
Mean.....	25.12	Weakest.....	18.10	Red Hermitage.....	12.73
Weakest.....	23.20	Cape Muscat.....	18.25	Gooseberry Wine.....	11.84
Port—		Roussillon—		Hock—	
Strongest.....	25.89	Strongest.....	19.00	Strongest.....	14.77
Mean.....	22.98	Mean.....	18.13	Mean.....	11.93
Weakest.....	21.40	Weakest.....	17.26	Weakest.....	11.70
Madeira—		Grape Wine.....	18.11	Orange Wine.....	11.26
Strongest.....	24.43	Malaga—		Tokay.....	9.68
Mean.....	24.17	Strongest.....	18.04	Elder Wine.....	8.76
Weakest.....	23.93	Mean.....	18.10	Cydis—	
Currant Wine.....	20.55	Weakest.....	17.26	Strongest.....	9.87
Cape Madeira—		White Hermitage.....	17.43	Mean.....	7.56
Strongest.....	22.94	Alba Flora.....	17.26	Weakest.....	5.21
Mean.....	20.51	Zante.....	17.05	Perry.....	7.26
Weakest.....	18.11	Malmsey.....	16.40	Burton Ale.....	8.63
Social.....	21.40	Shiraz.....	15.52	Edinburgh Ale.....	6.23
Strongest.....	22.30	Lund.....	15.52	Dorchester Ale.....	5.56
Mean.....	20.34	Syracuse.....	15.28	Average of Ales.....	6.67
Weakest.....	19.24	Claret—		Brown Stout.....	6.80
Teneriffe.....	19.79	Strongest.....	17.11	London Porter.....	4.30
Celeras.....	19.75	Mean.....	15.10	Small Beer.....	1.23
Red Madeira—		Weakest.....	12.91		
Strongest.....	22.30	Nice.....	14.63		

—*Journal of Mat. Medica.*

**Chinese Peppermint Oil.**—Some of this oil as sold in San Francisco, and used by the Chinese as a local anæsthetic, came into the hands of Professor Flückiger, who says of it, *inter alia* (*London Pharm. Journ. and Trans.*, Oct., 1871):—

I was suspicious enough to suppose the oil to be common peppermint oil of American or English origin, procured perhaps by the Chinese in San Francisco, although the said merchant firmly believed, for good reasons, as he thought, it was directly imported from China.

Having pointed out the magnificent fluorescence which nitric acid imparts to peppermint oil, I found that the above Chinese oil partakes not at all of this reaction; it is not colored by nitric acid (1.20 sp. gr.), even when gently warmed with it.

A few drops of the oil exposed for some hours only on a glass slide yielded abundantly crystals of a camphor, reminding me in every respect of the solid *Japanese peppermint oil*, which during the past few years has been met with in European trade.

In both the above respects the Chinese peppermint oil is consequently different, at least from most of the specimens of European and American oil at my command, although it has the same agreeable flavor. Does it, that is to say, its solid part, which appears to be prevailing, agree with the Japanese drug? I have ascertained that the latter is not altered by the treatment with nitric acid; it may, therefore, very likely be identical with the crystallizable part of Chinese oil. I have also been informed by the said Swiss gentleman that the "Chinese medicine" in cold weather solidifies even in California.

The solid Japanese oil has been shown by Oppenheim and by Gorup-Besanez to agree with the formula  $C_{10}H_{18} + H_2O$ , and to possess the nature of an alcohol. This so-called *Menthol* appears to be identical with peppermint-camphor, which sometimes in cold separates from peppermint oil; their identity, however, is not quite satisfactorily proved. Camphor obtained from peppermint oil has been analyzed by Dumas, by Blanchet and Sell, and also by Walter. Its percentage composition is the same as that of menthol.

**On the Distribution of Atropia in the Leaves and Root of Belladonna.**—The following conclusions have been arrived at by M. Jules Lefort:—

1. The leaves of the belladonna contain most atropia between the time of flowering and fruiting.
2. The leaves should always be gathered between flowering and fruiting.

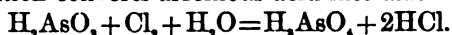
3. The wild and cultivated plants yield the same proportion of alkaloid.

4. The richness of the root varies very greatly with the age of the plant.

5. The young roots yield more atropia than those aged two or three years, because they contain a larger proportion of bark.—*L'Union Médicale*, November 23, 1871.

**The Importation of Opium.**—The money value of opium imported through the Custom House of New York City, in the year 1871, was \$1,299,091.—*New York Medical Record*.

**Chlorometry.**—A convenient method for the determination of the available chlorine in chlorinated lime is based upon the fact that chlorine in solution converts arsenious acid into arsenic acid, thus:



The arsenious solution is made by dissolving a weighed quantity of arsenious anhydride in a definite quantity of sodium carbonate solution, in such a manner that each c.c. of the solution shall contain a known weight of arsenious acid. A weighed quantity of the chlorinated lime to be tested is dissolved in water, and into this solution the standard arsenious solution is poured from a burette, until a drop of the mixture ceases to impart a blue color to test paper prepared with starch and potassium iodide. When this point is reached, all the available chlorine has been converted into hydrochloric acid, and from the quantity of the arsenious solution required the percentage of chlorine may be readily calculated.—*Medical and Surgical Reporter*, January 15, 1872.

**Fluid Extract of Chestnut Leaves.**—Prof. Maisch states that he has settled upon the following, after a good deal of experimentation, as the best method of making fluid extract of chestnut leaves:—

One difficulty in the management of chestnut leaves in the preparation of fluid extract is their bulkiness and flexibility; dried in the air, they cannot with any degree of facility be reduced to a powder, either in the mortar or hand-mill, so that their exhaustion cannot be effected by percolation. After cutting and bruising them, they are covered with hot water in an enamelled kettle, and digested over-night, when they are expressed; the digestion and expression are repeated twice with fresh portions of water, and the three infusions, each one mixed with glycerine or a portion of the sugar, evaporated to a small bulk, when they are mixed, and the evaporation continued until the proper measure is obtained; it is then set aside for several days and decanted from the small quantity of sediment.

The proportions used are as follows:—Chestnut leaves, dried, cut, and

bruised, 16 troy ounces; glycerine, 5 troy ounces (f  $\frac{3}{4}$  iv.); sugar, 8 troy ounces; hot water a sufficient quantity; the fluid extract to measure 16 fluid ounces.—*American Journal of Pharmacy*.

**Iodide of Potassium.**—The following analyses of this salt, taken from the *London Practitioner* for January, 1872, are satisfactory as showing the purity of the salt:—

No. I. White, very large opaque crystals, dry.

No. II. White, large opaque crystals, slightly moist.

No. III. White, large opaque crystals, slightly moist.

No. IV. White, very large opaque crystals, dry. Contains a minute trace of iodate.

No. V. White, small opaque crystals, slightly moist. Contains 1.24 per cent. of carbonate of potassium.

No. VI. White, large opaque crystals, dry. Contains traces of iodate.

No.	Moisture.	Iodine.	Chlorine.	Iodate.
I.	1.16	74.15	0.40	None
II.	1.69	73.75	0.35	None
III.	1.90	74.10	0.25	None
IV.	0.66	76.88	0.25	Minute trace
V.	2.20	72.76	0.12	None
VI.	0.83	74.15	0.80	Trace

Pure dry potassium iodide contains 76.50 per cent. of iodine.

## METHOD OF EXTRACTING QUININE FROM THE QUINOIDINE OF COMMERCE.

BY DR. I. E. DE VRY.

ONE hundred parts of the quinoidine are dissolved by the aid of a gentle heat, with stirring, in a solution of 50 parts of tartaric acid in 200 parts of water, and the whole is then set aside. If the quinoidine contains any quinine, as it generally does, the liquor forms after some days a crystalline paste more or less thick, which is to be put on a cloth. The brown syrupy liquid is allowed to drain as much as it will, and then more fluid is expressed from it, without the use of too much force, after which the residue is dissolved in 4 times its weight of boiling water and filtered whilst hot. As the bitartrate of quinine is soluble in hot and not in cold water, on cooling it is deposited in crystals, which may be decolorized by repeated solution and recrystallization. In this manner Dr. De Vry has obtained from 2 to 3 grammes of the brown crystals from 12 grammes of Howard's quinoidine.—*Bulletin de la Soc. royale de pharm. de Bruxelles*.

## Part 3.

## TOXICOLOGY.

## POISONING BY NITRATE OF SILVER.

BY THOS. SCATTERGOOD, ESQ.

A MEDICAL pupil, whilst touching an ulcer in a child's mouth, allowed a piece of a solid stick three-quarters inch long to slip down the throat. The child almost immediately vomited some oily matters supposed to be cod-liver oil and milk. After the vomiting had ceased, and within a few minutes after the swallowing of the caustic, large quantities of common salt were administered, after which the child was slightly convulsed. Again vomiting occurred, and curdy, whitish chloride of silver was rejected. The administration of salt was frequently repeated. Vomiting and convulsions occurred at short intervals for two hours, till 11:30 A.M. A copious liquid stool was then passed containing a quantity of white, curdy substance. At 1 P.M. the child fell into a composed sleep, which lasted for half an hour, after which the convulsions returned with increased violence, and continued until 3. The extremities then became cold, the face pinched, the skin clammy, the pulse almost imperceptible; at 3:30 P.M. the child died in violent convulsions.

*Autopsy.*—The cadaveric rigidity was well marked; the œsophagus showed two or three small patches of corrosion. The stomach contained two and a half ounces of inodorous liquid. Its mucous membrane was pale in color, with a single small ecchymosis, and exhibited a large patch of corrosion, interrupted transversely in several places, but extending from the cardiac opening along the greater curvature for four inches. It was half an inch wide at the cardiac end, and one and a half inches at the end nearest the pylorus, and was of a brilliant white color. In the duodenum and the first twelve inches of the jejunum, the *valvulæ conniventes* presented a similar corrosion over nearly their whole surface, but of a grayer color. Washing with water, and even rubbing with the fingers failed to remove this, but little white particles were detached, which analysis showed to be chloride of silver. No other abnormalities were found in the alimentary canal or viscera.

In his remarks, Mr. Scattergood states, the only good references to

case known to him were two contained in Beck's Medical Jurisprudence, and one mentioned by Devergie in *Médecine Légale*, vol. iii.

In the *British Med. Journal* of May 27, Mr. Ernest Hart details a case in which a large piece of lunar caustic was swallowed by a child 4 years old. Vomiting was immediately induced by forcing the fingers down the gullet, and several pints of milk were at once pumped into the stomach and out again. The child was kept on milk diet and recovered, after showing symptoms of gastro-intestinal inflammation for three days.

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#### CASE OF STRYCHNIA POISONING SUCCESSFULLY TREATED BY BROMIDE OF POTASSIUM.

IN this case, detailed by Dr. Cephus L. Bard, of California, a robust man, aged 35, partook of cakes poisoned by some enemy. Dr. Bard believed that more than three grains of the alkaloid were taken, and describes the case substantially as follows:—

A few moments after eating the man's attention was called to the fact that something was wrong, by the powerful contractions of the muscles of the neck, especially the sterno-cleido-mastoids. Fully realizing his position, he at once determined to go to a neighbor's house, in reaching which he had, however, the greatest difficulty, the muscles of his legs frequently contracting with so much force that he was thrown to the ground. Sweet oil and the whites of eggs were freely given. No emetics were given and no vomiting whatever occurred. The patient presented the following symptoms when I saw him some hours later: muscles of legs and arms rigidly flexed; slight opisthotonos; great dyspnoea; skin livid, and complete coldness of entire surface of body; jaws fixed, lips retracted, the teeth covered with frothy saliva, deglutition almost impossible; mind clear. The contractions were clonic in character, but the relaxations of short duration. The mouth was only opened with the greatest difficulty, and when medicine was forced into it the spoon was seized by the teeth. Dissolving an ounce of the bromide of potassium in a cup of water, I gave the patient half of it at once, and continued its use in smaller doses for an hour or so afterwards. Its good effects were shown in a diminution of the reflex excitability, and in the relief of the spasmodic action of the muscles of the pharynx, the difficulty of deglutition being consequently very much lessened. In less than thirty minutes after the administration of the first dose, complete relaxation of the whole body, accompanied by a return of warmth and by profuse perspiration, occurred; and on the following day (less than twenty-four hours from the time of taking

the poison) he arose from his bed, perfectly free from any unpleasant effects of either the poison or its antidote, with the exception of paralysis of the intestines, which finally yielded to the use of the bromide.—*Philadelphia Medical Times*.

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## ON SOME IMPROVEMENTS IN THE SPECTRUM METHOD OF DETECTING BLOOD.

BY H. C. SORBY, F.R.S., &C.

IN the following paper I shall give a condensed account of what I have been able to learn in connection with this subject, and omit everything that does not bear directly on determining whether any stain is, or is not, due to *blood*. There does not appear to be any probability of our being able to decide by this means whether it is, or is not, *human*.

The spectrum-microscope used in these inquiries should have a compound prism, with enough, but not too great, dispersive power, or else the bands would be as it were diluted and made less distinct. A combination of two rectangular prisms of crown glass, with a rectangular of very dense flint, and another of less dense, of such an angle as to give direct vision, turned towards the slit, appears to be the proper medium, and has other important advantages. The cells used for the experiments should be made from barometer tubing, and be about one-eighth of an inch in internal diameter, and half an inch long, one end being fastened to a piece of plate glass with purified gutta-percha, like an ordinary cell for mounting objects in liquids. It is, however, a very great advantage to insert between the plate and the cell a diaphragm of platinum foil, having a circular hole about two-thirds of the internal diameter of the tube, fixed so that its centre corresponds with that of the cell. This prevents any light passing upwards that has not penetrated through the whole length of the solution, which is very important when using direct concentrated sunlight to penetrate through turbid or very opaque liquids. A small spatula made of stout platinum wire, flattened at the end, is very convenient for adding small quantities of the reagents; and they should be stirred up in the cells with a platinum wire, flattened, and turned up square at the end, like a small hoe. The reagents commonly employed are a somewhat diluted solution of ammonia, citric acid, the double tartrate of potash and soda, used to prevent the precipitation of oxide of iron, and the double sulphate of the protoxide of iron and ammonia, em-

ployed to deoxidize; but in some special cases diluted hydrochloric acid, carefully purified boric acid, and sulphite of soda, are required.

The character of a stain varies much with its age, and with the nature of the substance on which it occurs. If quite recent, and if the substance has no immediate influence on blood, the stain would contain little or no coloring matter but hæmoglobin. This is easily dissolved by water, and when properly diluted—neither too strong nor too weak—it gives the well-known spectrum, with two dark absorption-bands in the green. The addition of a very little ammonia and a small quantity of the double tartrate produces no change; but on adding a small piece of the ferrous salt, about  $\frac{1}{16}$  of an inch in diameter, and carefully stirring, so as to mix without much exposure to the air, these bands gradually fade, and are replaced by the single broad and fainter band of deoxidized hæmoglobin. When stirred up so as to expose well to the air, the two original bands of oxidized hæmoglobin can be seen again. On gradually adding a little citric acid until the color begins to change, these bands slowly fade away; and, if the amount of blood was considerable, a faint band would make its appearance in the red. When previously deoxidized, this solution may be turbid, but not so as to interfere with the result. The addition of excess of ammonia makes all clear again, but does not restore the original bands, or only to a slight degree, thus showing that a permanent change is produced by citric acid—the hæmoglobin is changed into hæmatin. This alone serves to distinguish blood from by far the greater number of colored substances, which, after being changed by acid, are restored by alkalies to the original state. On deoxidizing with the ferrous salt, we obtain the well-marked spectrum of deoxidized hæmatin, with one very dark and another much fainter band in the green, almost or quite invisible when the quantity is small. If too much citric acid or double tartrate had been added, this solution might be turbid; but if all had been properly managed, it would be quite clear. Since the deoxidization takes place rather slowly, especially in cold weather, it is well to slightly stir up the ferrous salt at the bottom, completely fill up the cell, cover it with a piece of thin glass, remove the excess of liquid with blotting-paper, and mix the solution by turning the tube upside down, over and over again. On reoxidizing the solution by stirring, the bands of deoxidized hæmatin disappear, and the two bands of hæmoglobin will probably be recognized, owing to citric acid not changing the original merely into hæmatin, but also giving rise to some methæmoglobin. The whole of these facts may be seen with a single cell, containing about  $\frac{1}{16}$  of a grain of blood. Very faint bands are best seen by lamplight.—*Bowdoin Scientific Review*.



### COPPER AND IRON TESTS.

ACCORDING to Felix Bellany, alcoholic solution of logwood is an exceedingly sensitive test for salts of iron and copper, especially adapted for their detection in drinking-water. A suitable tincture is prepared by digesting 12 to 15 grammes of logwood in 100 grammes of alcohol, which had previously stood on quick-lime some days, and was after distilled off to free it from every trace of iron. If 20 drops of this tincture be shaken with 200 c.c. of water containing either iron or copper, the liquid becomes yellow through excess of carbonic acid, rose-violet if the bicarbonates of the alkalies or alkaline earth be predominant. If an iron or copper wire be now dipped into the liquid, the haematoxyline combines with the metal, and the color changes to blue—a blue streak is seen descending from the metal to the bottom of the vessel. According to Bellany, either iron or copper in such a state of dilution as 1 in 20,000,000 can be recognized by change of color, whilst 1 in 5,000,000 gives a blue precipitate. The blue coloration of ordinary white paper by logwood tincture is owing to the iron in it.—*Year-Book of Pharmacy*.

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### A CASE OF SELF-STRANGULATION.

MR. C. R. FRANCIS was called to decide whether the case was one of murder or suicide. Two lunatics had been left together in a room, and one was found as below detailed. When Mr. Francis arrived, one was a corpse; the other was quietly seated on his charpoy, swinging his legs backwards and forwards, grinning at the scene.

The decision was that the case was one of self-strangulation, for the following reasons:—

1. The great disproportion of strength between the two lunatics—the dead one being a Hercules—and the absence of evidences of a struggle.
2. The placid expression of the survivor, his tranquil respiration and pulse.
3. No previous hostility had existed between the two; but the self-slayer had been very moody for some time.
4. Position of the corpse: both wrists were firmly bound with a cord, which was also wound several times around the neck, making deep indentations into it. With the hands extended outwards, pres-

sure on the neck would ensue, and the cord was just long enough to make this most effective.

A remarkable physiological feature in the case was the rigid contraction of the arms, whose hands nearly touched the shoulders. In life they had been most forcibly and fully extended to accomplish the strangulation. At the moment of death they must have contracted most fully, and almost immediately the *rigor mortis* followed.—*The Indian Medical Gazette*, May 1, 1871.

## A NEW TEST FOR STRYCHNIA.

BY F. L. SONNENSCHIEIN.

If strychnia be dissolved in a concentrated solution of sulphate of sesquioxide of cerium, there is formed a beautiful blue color, closely resembling that produced by the bichromate of potash under similar circumstances. The color is, however, much more intense, and lasts a much longer time. It generally passes over into a cherry-red, and then persists unchanged for many days. In this way one-millionth part of a gramme of strychnia can be recognized. The following table shows the color produced by various other alkaloids, when treated in the same way:—

Brucin.....	Orange, and finally yellow.
Morphia.....	Brown, olive-green, and finally brown.
Narcotin.....	Brown, cherry-red, and finally cherry-red.
Codeia.....	Olive-green, and finally brown.
Quinia.....	Pale yellow.
Cinchonia.....	No color developed.
Thein.....	No color developed.
Veratria.....	Reddish brown.
Atropia.....	Yellowish brown.
Solanin.....	Yellow, and finally brown.
Emetia.....	Brown.
Colchicum.....	Green, and finally dirty brown.
Conia.....	Clear yellow.
Piperin.....	Colors the sulphuric acid blood-red, and is changed by the ceriumoxide into dark brown, almost black.

—*Vierteljahrschrift für prak. Pharm.*

## POISONING BY "KURWA THUMREE"—CUCURBITA LAGENARIA.

A MEDICAL pupil took nearly a pint of the infusion, in milk, of the fruit (strength 8 oz. to O) of *Cucurbita lagenaria*. Assistant Surgeon

A. M. Paterson one hour afterwards found him semi-collapsed, pulseless, and complaining of great pain in the stomach, with occasional spasms of the abdominal muscles. He vomited very freely, chiefly milk, and also purged; the stools at first were watery and of a yellow tinge, but afterwards were small and mucous. The vomiting, purging, and pain abated under treatment, but there was no attempt at reaction, and he died in collapse four hours after taking the poison.

Baboo Kannyloll Dey, F.U.C., states that the juice of the pulp of *Cucurbita lagenaria* is a violent acrid poison, chiefly affecting the alimentary canal, and resembling in its action elaterium. He describes the following case:—

Bodha, a man aged 40, took an overdose early one morning. In half an hour he had nausea and pain in the abdomen, and shortly began to vomit, at first only bilious fluid, but afterwards also blood. At the same time he had violent bloody purging. At 3 P.M. next day Mr. Dey saw him first. There had been no secretion of urine; body cold; no perceptible pulse; great restlessness, severe abdominal pains without cramps, hiccup, were all present. He was ordered a grain of opium every hour, and ice *ad libitum*. He first began to rally at 4 A.M. the next day. His pulse was then perceptible, but very weak; but it was not until the morning of the fourth day that he passed water, which he did copiously.—*The Indian Medical Gazette*, May 1, 1871.

## ON THE INFLUENCE OF THE SO-CALLED POISONOUS SHADOWS.

BY H. KARSTENS.

In a paper with the above title, H. Karstens states that during a long residence in Tropical America he became well acquainted with the euphorbiaceous tree *Hippomane manzanilla* L., and with the fact that the natives considered it so poisonous as to avoid going near it, asserting that merely resting under its thick shade will produce serious sickness, and in very susceptible persons even death. This poisonous power having been denied by various naturalists, especially Jacquin, our author gathered some of the juice, on the sea-coast of Venezuela, near La Guayra. In a very short time he was seized with a burning feeling all over the body, followed by swelling, especially of the face and eyes. The next morning he was unable to open the latter, and their irritation was so great as to force him to pass several days of great pain in a dark room. On the third day the swelling began to go down and the epidermis to desquamate. The hippomane has then a juice which in a dry atmosphere evaporates from the moist bark and

acts as an irritant poison to the skin and mucous membrane. The reason Jacquin remained a number of hours in close proximity to a tree without injury, was a prevailing thunder-gust, the torrents of water washing out, as it were, the volatile principle from the air. Herr Karstens thinks the organic base in trimethylamin is an analogue of the poisonous principle, and that the latter is probably nitrogenous, a substitution product of ammonia.—*Vierteljahrschrift für prakt. Pharm.*, July 1, 1871.

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### CASE OF POISONING BY SEEDS OF RICINUS.

BY DR. RAPP.

A SOLDIER had taken seventeen seeds of ricinus as a purgative. After three or four hours diarrhoea set in, with burning and cramps in the stomach, and soon vomiting. The matters vomited contained oil-drops and fragments of the seeds. The diarrhoea increased, became very watery, almost incessant. Finally the man became very cold, and eleven hours and a half after taking the poison came into hospital. His face at that time was pale and anxious, the forehead bedewed with cold sweat, the eyes distorted, pupils somewhat dilated. The surface was very cold to the hand, the limbs full of cramps, and the pulse of normal frequency, but very small, the radial being scarcely perceptible. Consciousness was perfect, but the man complained of headache, giddiness, roaring in the ears, great thirst, precordial anguish, severe pain radiating from the navel throughout the abdomen, and a strong feeling of constriction in the intestines. Anuria had existed some five hours. The vomit was watery, slightly yellowish, with masses resembling white of egg. The stools closely counterfeited those of cholera. Clysters were given to remove any portion of the seeds which might be remaining in the intestines, external heat was used, hot drinks internally, and large doses of antispasmodics. Under this treatment the man slowly grew better, although the vomiting persisted all night, and the anuria through the next day. There was a slight febrile reaction, but in ten days the patient had recovered.—*Schmidt's Jahrbücher*, June 19, 1871.

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### SUDDEN DEATH AFTER TAKING CHLORAL.

THE following case is related by Dr. W. H. Lathrop, but occurred in the practice of another physician:—

The patient, æt. 30, of the best general health, but suffering from an

attack of *delirium tremens*, had not slept apparently for about six days. He was not in any respect delirious, nor had he been so. The patient was perfectly sensible in his conversation, and urged an increase in the quantity of his medicine to obtain a little sleep. The first dose of 20 grains was given at noon; successive doses of the same quantity were given at 12.30 and at 1 P.M. The patient having then taken 60 grains without any apparent effect, a consulting physician was called, by whose advice, at 2.30 P.M., another dose of 20 grains was administered, without effect, followed at 3 P.M. by 20 grains more. About ten minutes after this the two physicians left the house, having noticed no change in the condition of their patient, except that he complained of a slight paralysis in the right lower extremity. They had hardly left the house, however, when they were called back to find the patient *dead*.

A *post-mortem* examination revealed nothing, except that the heart was slightly shrivelled. The brain and spinal cord were carefully examined, as well as the thoracic and abdominal organs.

[Death in this case was probably due to sudden failure of the heart's action. It is a matter of great probability that, as with chloroform, chloral will, in a certain per cent., cause sudden unexpected death in this way.—Ed.]—*Detroit Review of Med. and Pharmacy*.

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### TOXICAL EFFECTS OF HYDRATE OF CHLORAL WHEN PERSISTENTLY USED AS A HYPNOTIC, AND FATAL RESULTS OF LARGE DOSES.

BY N. R. SMITH, M.D., BALTIMORE,

LATE PROFESSOR OF SURGERY IN THE UNIVERSITY OF MARYLAND.

In February last a medical friend, long retired from practice, called on me for advice in regard to a singular affection of the fingers of both hands, attended with desquamation of the cuticle and superficial ulceration, especially about the borders of the nails. It was attended with pain and much morbid sensibility to touch. It was also associated with some acceleration of pulse and general malaise. He visited me daily for some ten days, when, by the use of astringent lotions and mild digestive ointment, the local affection was overcome. He informed me that he had been taking chloral in liberal doses, as a hypnotic, for four months. He expressed to me his conviction that the disease of his fingers had resulted from the use of that medicine.

Having never observed the agent to produce such a result, I was reluctant to believe that it was the case.

Some three weeks after the cure of the local affection, I was called

to attend my friend in consultation with his family physician. We found him laboring under acute bronchitis in severe degree. His respiration was exceedingly embarrassed, and there was a high degree of hoarse mucous râle. The bronchial tubes were filling; the pulse was about 140, and the action of the heart *extremely feeble*. By the treatment adopted, our object was to sustain the powers of life, which were rapidly failing, and to relieve the bronchial tubes of mucus. Our efforts, however, were unavailing. He died on the third day after I first saw him.

I scarcely, at the moment, entertained a suspicion that the use of chloral was concerned in producing the fatal malady of my friend, it being not at all uncommon for persons of his age (70) to succumb suddenly to such malady from ordinary causes.

Some three weeks later I accidentally met a medical friend, who expressed pleasure at the meeting, as he wished to consult me in relation to a singular affection under which his daughter, a young lady twenty-two years of age, was suffering. He described precisely the affections of the integuments of the fingers which had occurred in the case described above—erythematous inflammation, desquamation, and ulceration around the border of the nails.

Struck with the resemblance which her malady bore to that of my friend, Dr. C—, I inquired if she had been taking chloral. He replied that she had taken it as a hypnotic for a month, every night, and that he had suspected that article to be the cause of her disease.

The young lady was not suffering constitutionally at that time; but about ten days after I was called to see her. I found her extremely ill. There was universal anasarca. The action of the heart was exceedingly feeble, the pulse 140, and extremely weak. Her respiration was much embarrassed, and the recumbent posture was impossible. Procuring some of the urinary secretion, I tested it with nitric acid, and discovered a notable quantity of albumen.

I was very apprehensive of a fatal result, but immediately prescribed stimulants and diuretics, digitalis being the constituent most relied upon.

On visiting the patient, after an interval of a day, I was much surprised and gratified to find her greatly improved. Her pulse had been reduced to 90, and was greatly improved in tone. The kidneys had acted freely, and the anasarca had much abated.

Having been myself confined by illness, I did not again see her. On meeting her father some three weeks later, I was gratified to learn that she had entirely recovered.

I have knowledge of two other cases in which the same affection of the fingers resulted from the use of chloral.

Within the last ten days two deaths have occurred in Baltimore, manifestly from the toxæmia caused by an overdose of chloral. The subject of one of these accidents had been under the care of an irregular physician, and by his advice had taken chloral in ordinary doses for the relief of a painful neuralgic affection of the neck.

After the medical attendant had discontinued his visits, the patient persisted in the use of the hydrate, taking it, as I was informed by his brother, in doses of not less than half a drachm. On the day of his death he was known to have purchased three drachms of the article. How much he took during the day is unknown. In the evening he retired to his chamber, and in about twenty minutes after was found dead beside his bed. He was undressed, and the bed-clothes were turned down, but the bed was undisturbed, and it was manifest that death had arrested him at the moment that he was prepared to step into bed. The coal-oil lamp which he used was extinguished, but the glass chimney was still hot. The glass from which he had taken the chloral stood on a small table near the head of the bed, and in it were a few drops of the medicine, recognized by his brother by taste and smell. There can be no doubt, therefore, that he fell almost instantly dead from the effects of the poison.

Another instance of almost equally sudden death has recently occurred in this community. The fact is generally known, but I am not authorized to name the individual. He had been laboring under a painful affection of the head, and was attended by a Homœopathic physician. On the evening of the night of his death he had a hypodermic injection of morphine practiced upon him, probably in ordinary quantity. This not relieving his pain, chloral was administered. He went to bed, soon became quiet, and for some hours was left undisturbed. His perfect stillness at length attracting attention, he was found to be dead, and probably had died soon after the administration of the chloral. I have no reason to believe that the medicine was given in larger dose than has been recommended as safe by high authority, nor do I know whether he had taken it for any length of time.

Another case of which I have knowledge was that of a lady, who had undergone a severe surgical operation. As she suffered pain, and was restless, it was determined, in consultation, to give chloral by injection, so as to avoid irritating the stomach. A drachm and a half was thrown into the rectum. She at once sunk into a state of insensibility, and died in some three hours. An eminent physician of Washington, who was in immediate attendance on the case, Dr. N. S. Lincoln, gave it as his opinion that she died from the effects of the chloral.

These cases are, it appears to me, amply sufficient to establish the

toxic effects of this powerful agent. It is probable that its poisonous effects are exerted in two ways:—

1st. When given in a large dose, and especially where the system may have been charged with it by its previous administration, it at once overwhelms the powers of life, and causes immediate death.

Upon what organ or organs does it exert its deadly effects? It must be either upon the heart or the brain, perhaps on both. It is believed that chloral, entering into the blood, develops chloroform in that fluid, the amount developed being determined not merely by the quantity taken, but by the condition of that fluid. Chloroform, we know, when respired, exerts its influence upon both brain and heart. In the numerous cases in which it has caused death, this result has been produced by its interrupting the circulation.

2d. It appears, when given in small doses and continuously for some time, to induce a form of toxæmia similar to that caused by the continued administration of ergot. Its effects on the fingers of both hands, in the two cases related above, would justify such a belief. It is well known that animals fed on spurred rye suffer gangrene of the extremities.

In one case in which I tested the urine, albumen in notable quantity was detected. This case alone, however, establishes nothing.

Another very interesting and important inquiry is certainly suggested by the foregoing observations, crude as they are.

If chloroform, developed in the blood from chloral, is productive of such disastrous effects, primary and secondary, can the direct inspiration of chloroform be as innocuous as it is thought to be?

The profession are sufficiently aware of the fatal primary effects of chloroform in numerous instances. It has undoubtedly caused death in many cases in which it has been given, with every caution in regard to quantity and mode of administration—in cases, too, where there existed no malady of brain or heart to forbid its use. In some instances it has been administered fatally, in which it has been previously treated with good result.

But I would more especially call the attention of the profession to the chronic poisoning of the blood, which I believe results from its free and repeated use.

The writer of this article has administered chloroform perhaps as often as any other surgeon in America, both in hospital and private practice, commencing its use from the time of its discovery, and its first application as an anæsthetic. Indeed, I have been constrained to use it in many cases in which my judgment was adverse to its use, for such is the overweening confidence in its effects, that many patients refuse operations except under its influence. But the more I have



used chloroform the less has my confidence become in its innocuousness. When I compare the results of my operations performed before anæsthetics were employed, with those performed during the last twenty years by the aid of chloroform, I am satisfied that unpleasant secondary results were less frequent during the past period than they have been under the use of that agent. I allude to secondary hemorrhage, pyæmia, erysipelas, and hospital gangrene.

Whoever will take the trouble to look over the medical journals and retrospects of the last two years, will discover that pyæmia or septicæmia occupies far more space in surgical records than it did before anæsthetics were so generally employed.

When chloroform is administered during the period of an hour or more, as it frequently is, it undoubtedly enters copiously into the circulation, not only powerfully impressing the brain and heart but modifying the constitution of the blood and functions of the capillaries. If the effect of chloroform, developed from chloral in the blood, be such as I have shown on the functions of the minute vessels, causing erythema and ulceration in the extreme parts, may we not suppose that the introduction of chloroform more directly into the circulation may promote the occurrence of those results not uncommon before its use?

These suggestions, I trust, will not be regarded as impertinent from one who has practised surgery for more than half a century, without and with the anæsthetic agents.

I doubt not that, if these remarks are deemed worthy of any notice at all, they will be rejected by the majority of the profession, but I have an abiding confidence that their truth will be ultimately acknowledged.—*Boston Medical and Surgical Journal*.

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## ON THE TREATMENT OF SNAKE-BITE.

BY DR. FAYRER.

According to Dr. Fayrer, the chief hope in the treatment of the bite of the Indian snakes is the prevention of the entrance of the poison into the circulation. To do this a ligature must be placed around the injured part, when possible, so tightly as absolutely to arrest circulation. As constitutional symptoms sometimes manifest themselves in a few seconds, promptness is of the utmost importance, and no mercy should be shown in the application of the ligature. A piece of the dress twisted, a bit of string, a strap, &c., should be immediately applied, and should be strained to the uttermost by twisting with a piece of stick; nor should the tension cease until the circulation is entirely

arrested, and the part livid with the retained blood. Dr. F. has found it all but impossible, with the strength of a pair of hands, so to tighten the ligature as to effect complete strangulation of a dog's hind leg, and nothing less than complete strangulation is of avail. If a finger be bitten, it is best to apply three ligatures as tightly as possible; one on the finger itself, another on the forearm or wrist, and a third still higher up. No time should be lost in scarifying the punctures so as to allow the blood to flow freely, and then in applying some caustic of sufficient strength to induce complete disorganization of the strangulated part, else enough of the poison will remain to induce death when the ligatures are removed. When a finger or toe is bitten, the best treatment is to seize a knife or hatchet and instantly lop it off. As a caustic the natives apply a live coal or explode gunpowder in the wound, and no doubt these methods are most effectual. When a wound is in such position that a ligature cannot be applied, instant deep scarification and the relentless use of the fire or caustic must be resorted to. Suction of the wound by cupping-glasses, etc., is useful, and should be applied after the ligature or scarification, before the cantery. Suction by the mouth is dangerous, as there is no doubt but that the mucous membrane will absorb sufficient of the cobra poison to induce death. Liq. ammoniæ or liq. potassæ the Doctor entirely condemns as a local application, stating that he has mixed them in equal parts with the poison without impairing its efficiency. For constitutional treatment, the only remedies as yet known of any value are whisky, rum, or brandy—best diluted with equal parts of hot water. Ammonia is also useful as a stimulant, but has no specific action. The practice of walking a patient to arouse him, Dr. Fayrer believes of direct influence in accelerating death. Absolute rest and quiet, in order to save nerve-power, he strongly recommends. External stimulants, as dry heat, mustard plasters; galvanism may also be used. Dr. Fayrer states that in his experiments on animals he has not found the injection of ammonia into the veins, as recommended by Halford, of any use. The importance of the subject of snake-bite in India is shown by the fact that in the Burdwan Division alone, with a population of less than six millions, there were, in a period of nine years (from 1860 to 1868 inclusive), 9,232 deaths from this cause.—*The Indian Annals of Medical Science.*

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#### POISONING BY OXALIC ACID.

DR. FINNELL exhibited to the New York Pathological Society portions of the intestinal tract removed from a female aged thirty-seven, who had accidentally poisoned herself by taking oxalic acid instead of

Epsom salts. An ounce of the poison was probably swallowed. The mistake was discovered at once, Dr. Finnell was sent for, and in the course of ten minutes he was by her side. Rancid lamp-oil and chalk were at once administered, but very little, if any, of either was retained. The symptoms progressed, however, and at the end of ten hours she died. At first she complained of a great deal of burning pain at the pit of her stomach, also in the genital organs. She passed no water during the whole ten hours. Two hours after the accident the pulsation of the radials disappeared. She was for the greater part of the time able to walk about the room until towards the middle of the day, when she complained of numbness from the shoulders to the tips of the fingers. She was conscious to within a few moments of her death, occupying herself in pulling from her throat strings of ropy mucus. The autopsy was made six hours after death. The whole intestinal tract was very much reddened, more so than the stomach itself.—*N. Y. Medical Record.*

**Warning against the Use of Petroleum Casks for Containing Food.**—Under the above caption the *Vierteljahrschr. für prakt. Pharm.* notices the death of two men, and the serious illness of others, near Aschaffenburg, produced by drinking perry which had been kept in an old petroleum cask.

**Test for Blood-Stains.**—The following test will show the smallest quantities of blood, even after a long time, and where attempts have been made to remove them, notwithstanding the destruction of the blood-globules. If the smallest quantity of coloring matter remains, the test is sure. The crystals which are obtained in this test are so characteristic in form under some peculiar circumstances, that it is impossible to be deceived. The following is the *modus operandi*:—

Some of the fluid obtained by the usual means of washing the spot with distilled water is put in a watch-crystal; add a little of the solution of common salt, and let it dry under the bell-glass of an air-pump, near a glass containing sulphuric acid. Now wash the deposit on the crystal with acid acetic. glac.; evaporate to dryness at a temperature of 100° C. on the water-bath; then add a few drops of water, and watch the crystallization under the microscope. Any one who has once seen and watched the crystallization can never be mistaken.—*Medical Gazette.*

**Test for Blood-Stains.**—J. W. Gunning (*Jour. of Applied Chemistry*) has discovered that acetate of zinc will completely precipitate the coloring matter of blood from solutions. The flocculent precipitate must be washed by decantation, left to evaporate and dry on a watch-glass, and if blood is present the microscope will reveal delicate and beautiful hæmin crystals.

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**TUTU PLANT OF NEW ZEALAND—CORIARIA NESCI-FOLIA.**

MR. H. G. HUGHES has a not very clear paper in London *Pharmaceutical Journal* of October 7, on this plant. He made a number of attempts, but failed, to separate with certainty the active principle. One of the most satisfactory analyses and results are given as follows:—

“To an alcoholic extract of the seeds a little powdered lime was added and mixed, and the whole well washed with alcohol, ether, and chloroform in succession. Neither of the latter two yielded anything upon spontaneous evaporation. The alcoholic solution was evaporated; the residue treated with acid sulph. dil., filtered, and pot. carb. added in excess, causing a flocculent precipitate. The solution separated, the precipitate was treated with alcohol and filtered. As the solution became more concentrated, a heavy olive-colored oily fluid separated. Some shoots of the tree, gathered 3d December, 1869, also yielded this oily fluid. It is of a most poisonous nature, half a drop administered to a carrier exciting most severe symptoms (vomiting and convulsions). After further concentration, ether was added, when a yellowish precipitate formed, the oily fluid separating of a clear olive-green color. As the ether volatilized, the precipitate was redissolved by the alcohol; the oily fluid remained. Chloroform added caused a pure snow-white precipitate, which floated, the oil still remaining unaffected. It was then separated from the precipitate, dissolved in alcohol, and filtered. Upon evaporating spontaneously, it deposited feathery crystals of a dingy color (impure or contaminated with the oily fluid). Before all the alcohol had evaporated, chloroform always gave a pure snow-white precipitate. The crystals were extremely deliquescent. I thought this oily-looking fluid was a liquid alkaloid similar to conia. It was soluble in alcohol, but insoluble in both ether and chloroform. The alcoholic solution of this oily substance and white alkaloid possessed very energetic properties, an all but inappreciable quantity bringing on, almost immediately, a very distressing suffocating sensation, and an unpleasant feeling of roughness and insensibility of the palate. Not any of the fragrant oil was found

"It is very remarkable that this oily fluid is perfectly insoluble both in ether and chloroform, and soluble in alcohol and a mixture of alcohol and water; and whatever the poisonous principle or principles may be, that slaked lime made into a thin cream with water instantly destroys it or them, with or accompanied by the evolution of ammoniacal vapor."

The poisonous extract was found to be very unstable, undergoing almost complete spontaneous decomposition in four days, it becoming more fluid and physiologically inert.

"Acetic acid fixes or preserves the poisonous property (for a time, at least), arresting its decomposition. When lime is added to good extract (poisonous), strong ammoniacal vapor is evolved; but on the fourth day, in the lime mixed with it, although possessing the odor of the essential oil, not the slightest trace of ammonia can be detected; the oil also, when destroyed by the lime, not giving any ammoniacal vapor, indicates it to be of a different composition, and a non-nitrogenous oil. The decomposition of the poisonous principle, resulting in the evolution of ammonia, shows nitrogen to be present in it. The fragrant oil comes over at 212° F., the poisonous principle at between 350° and 400° F."

Dr. Acheson made a number of experiments upon animals, and reports the general symptoms to be those of strychnine poisoning, with the addition of severe vomiting. Lime he found to be a complete antidote.

We quote a single experiment:—

"I administered about a drachm of fresh extract to two dogs. To one of the dogs the extract was given in a mixture of lime and water. It remained in the stomach for several minutes before vomiting commenced. After the expiration of half an hour from the cessation of vomiting, we determined to administer a drachm of the extract alone, being merely dissolved in a little water. This he retained for twenty minutes without any vomiting taking place. We then administered to him a quantity of lime mixture. He never showed the slightest symptom of poisoning. To the other dog the extract was given in a quantity of water merely. A few minutes after administration symptoms of poisoning commenced, and in twenty minutes he had a regular attack of pure tetanic convulsions. Immediately after the first paroxysm we emptied into the stomach a quantity of the lime mixture, after which he had one severe fit, from which he recovered rapidly, and in the course of a very short period he was perfectly free from all symptoms of poisoning."

## POISONING BY WATER HEMLOCK—CICUTA VIROSA.

BY HENRY WILSON, M.R.C.S.

T. G., æt. 48, a farm laborer, dined, on January 8, off boiled meats and parsnips. The frost being very severe, he had extracted the roots from the ground with a pickaxe, and among them one which he thought at first was horse-radish, but, finding it had a sweetish taste, cooked it with the rest and ate it. He described it as being four or five inches in length and little larger in circumference than his thumb. I was shown two small pieces of rootlet; their taste was a peculiar sweet somewhat resembling that of liquorice; they were of the exact color of parsnips. At 12.30 he dined. At 1 went to his work, which he had no sooner commenced than he felt giddiness and dryness of throat. Suspecting poisoning, he started immediately for home. He walked the distance (about a quarter of a mile) with great difficulty, his legs being very unsteady in their movements, and all surrounding objects appearing as if they were alternately receding and advancing. He sat down in a chair, where I found him at 2 p. m.; the lower extremities were numbed—not insensitive, but completely paralyzed. His arms felt numbed, and their movements were weak. He had an anxious expression and flushed countenance, and declared he should die. Skin warm and dry; pulse 90. Ten grains of sulphate of copper vomited him at once. At 4 p. m. he was able to stand, and with difficulty walked across the room. Between this time and 6 p. m. he passed large quantities of urine, and had hallucinations, at times feeling very cold. At 8 p. m. in bed; extremities cold; pupils dilated; pulse 90; skin and throat very dry; no actions; delirious at times during the night.—*London Lancet*, Sept. 16, 1871.

## POISONING BY LABURNUM (CYTISUS LABURNUM.)

BY H. WILSON.

At 11 p. m., August 4, 1871, I was called to see H. S., 4 years old. His father stated he was suffering from eating laburnum seeds 3 hours before; number not certainly known. About half an hour after eating the seeds he began to vomit, first food, afterwards mucus, and continued to do so occasionally till my arrival. At 10 p. m. he became very drowsy, and was seized with convulsions. His mother stated that every few minutes he shook violently and drew up his legs. At 11 p. m. convulsions had ceased; he was very drowsy, but readily roused for a moment; both pupils were widely dilated; pulse small—85; surface

cold, especially extremities. He got no treatment excepting warm milk and water, both by stomach and bowels, and at midnight was in calm sleep: the next day well.—*London Lancet*, Sept. 16, 1871.

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### POISONING BY THE LOCAL APPLICATION OF BICHLORIDE OF MERCURY.

DR. MUNS reports the following case more in detail in the *Lancet* of Sept. 16.

Miss Harriet F——, aged 9, was brought to Dr. Muns, August 21, suffering from tinea tonsurans. On August 28 the note is: The disease seemed spreading, and I proposed as a speedy cure the application of bichloride of mercury, as recommended by Dr. Tilbury Fox. With a small camel's-hair brush I applied the solution to each of the patches. A little of the solution was accidentally allowed to escape in the sulcus behind the left ear. No pain was felt before the child left the room.

Monday evening.—There had been considerable pain, sharp diarrhoea, and sickness. The painted surfaces were blistered.

Tuesday morning.—Child had passed a bad night; the bowels were relaxed, and everything, except cold water, induced sickness.

Tuesday evening.—There was marked salivation and a general puffiness of the face. The salivation and prostration grew worse steadily until Thursday evening, when it was thought that the swelling of the glands was rather lessening; but in the night the patient got out of bed unassisted, went to the night-stool, fainted, and could not be rallied. The treatment consisted throughout of exhibition of morphia, stimulants and beef tea, milk and similar articles of food.—*London Lancet*, Sept. 16, 1871.

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### ON THE RECOGNITION OF CONIA AFTER POISONING BY CONIUM MACULATUM.

THE entrails of a man poisoned with conium maculatum were given by the magistrate to some apothecaries in G—— for conia to be sought for. After careful experiment, the apothecaries stated that not all the reactions of the alkaloid were perceivable, and therefore it must remain doubtful whether it was present or not. The intestines were then sent to Prof. N., of N——, who affirmed the presence of the alkaloid. The magistrate then asked for an opinion from the provincial medical society and that of Berlin. The report of these two authorities was

substantially as follows:—The experts E. and M. on the one side, and N. on the other side, have used different methods in looking for the conia. The two first have practised the method of Duflos, the last that of Stas. Both methods aim at obtaining the pure conia, that it may be recognized by its own properties.

According to the first method the contents of the gut are decomposed by baryta water, and the liberated alkaloid taken up by concentrated alcohol and formed into an oxalate by the addition of oxalic acid. Out of the oxalate evaporated almost to dryness the conium is set free by an excess of magnesia, and distilled at a temperature of 130°–140° C., into a retort.

In the second method the bowels' contents are treated with water and sulphuric acid, and the solution of the sulphate of conia obtained is evaporated to a syrupy consistency.

Out of the residue the sulphate is dissolved in absolute alcohol, and the solution evaporated in vacuo. The acid residue is treated with ether until the ether, in which the sulphate is almost insoluble, will take up nothing more. The purified sulphate is then decomposed with an alkali, and the liberated conia dissolved with ether.

The liquid remaining on the evaporation of the ether can then be examined with reagents.

When Herren E. and M. treated the remains in the first way, they obtained an alkaline fluid, in which they sought for chemical evidence of the presence of conia; but this search yielded them no definite result.

Proceeding in accordance with the second method, Herr N. obtained an alkaline fluid, in which he believed that he recognized conia for the following reasons:—

1. The smell was disagreeable, resembling that of mice and of conia, and the taste sharp and tobacco-like.
2. A glass rod, moistened with muriatic acid, surrounded itself with white heavy cloud when brought near to the fluid.
3. A drop of the solution placed upon a slide gave, with solution of silver, a white precipitate, out of which, on standing, metallic silver separated.
4. Solution of iodine produced a brownish red precipitate, which afterwards became clear.
5. The solution in muriatic acid, allowed to evaporate on a slide, gave a crystalline mass, which, under the microscope, showed with the polarizing apparatus a beautiful play of colors.
6. The same solution gave with chloride of platinum oily drops, which, after standing, formed red pillars, which were free from regular crystals.



7. Tannin produced a whitish turbidity.
8. Chloride of palladium produced a brownish-red precipitate.
9. Treated with chlorate of potash and sulphuric acid, the odor of butyric acid was evolved.

The reactions here given certainly all belong to conia, but the majority of them are in no sense peculiar to it. As to the odor and taste, even if no other alkaloid possessed such, yet the perception of such taste and smell, especially the latter, is so liable to error as to make it emphatically untrustworthy. This remark also applies to the asserted production of butyric acid (No. 9). Butyric acid is not to be distinguished by smell from (Capron-Säure), and, if in small quantity, might very readily be confounded with impure acetic acid.

The formation (2) of the cloud on the approach of hydrochloric acid happens wherever any volatile base is present.

The action with the silver solution (3) is common to very many alkaloids, as is also reaction No. 4.

Nor is the evidence of the polariscope (No. 5) more trustworthy, as the appearances are presented by numerous crystalline bodies; the sulphates of trimethylamin or triethylamin might, for instance, have been present and caused the appearances.

The precipitates in 6, 7, and 8 might be yielded by numerous alkaloids.

In order to recognize with certainty conia, it is necessary to have recourse to the physiological test, which none of the experts applied.

In conclusion, the answer of the apothecaries first applied to seems the more correct.—*Vierteljahrsschrift für Prakt. Pharmacie*, Oct. 1st, 1871.

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### AN EXCESSIVE DOSE OF CHLORAL.

DR. JAMES RODMAN, of Hopkinsville, Ky., relates the following case in the *American Practitioner*:—

Owing to a mistake of the nurse, the patient, an insane gentleman, had taken 270 grains in less than two hours. Deep sleep followed, which was not regarded with concern by the attendants until seven or eight hours had elapsed. Dr. R. then found him sleeping heavily, but quietly, his skin rather warmer than natural, pulse less frequent than in health, but full and strong; his pupils were sluggish and contracted, conjunctiva injected, respiration normal in character and fifteen in a minute, and he could with difficulty be aroused to any sense of his surroundings. Sleep continued eighteen hours, during which time the

patient was aroused only occasionally by considerable effort, and swallowed a little water.

The treatment consisted of cold effusions to the head, not frequently repeated, and he was walked at short intervals between two assistants, and vapor of ammonia applied to his nostrils. When the patient awakened, he presented the appearance of a man recovering from profound alcoholic intoxication. There was no headache nor nausea. He had a keen appetite, healthy pulse, warm extremities, but a constant sense of chilliness, that passed away in a few hours.

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### SNAKE-BITES.

WE need not wonder at the eagerness with which physicians and authorities in India examine every new remedy put forth as an antidote to the poison of a snake-bite, when we learn that in British India, including British Burmah, the deaths from snake-bite during the past three years amount to 25,664. This statement appears in an official report published in the *Gazette of India*. From that report we also learn that during the same period the deaths resulting from the attacks of all kinds of wild beasts in the same area numbered 12,554. The snakes killed more than twice as many as were slain by the tigers and all the other fierce forest rangers put together. Truly the serpent is still "more subtle than all the beasts of the field."—*Chemist and Druggist*.

According to the *Indian Medical Gazette*, the Inspector of Police reported that of 939 cases of snake-bites in which ammonia was administered by the police, 702 are reported to have recovered, and the average length of the time between the bite and the application of the ammonia is said to have been, in fatal cases, 4h. 12m. 13s., and in cases of recovery 3h. 28m. 14s.—*Nature*, Nov. 30, '71.

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### POISONING WITH OUNCE EACH OF CHLOROFORM AND ETHER AND EIGHT GRAINS OF MORPHIA.—RECOVERY.

In the *Nashville Journal of Medicine and Surgery* for December, 1871, Dr. E. L. McTyre, of Capivary, Brazil, says:—

A short time since, I was called to attend a man, aged 30 years, who, for the purpose of self-destruction, had taken, at a dose, and without dilution, an ounce each of chloroform and sulphuric ether, and eight grains of morphine. For two days previous to the occurrence he had refused all food, and, consequently, the stomach was in a proper condition to be readily impressed with the medicines.

He swallowed the potion at seven o'clock in the morning. His family were attracted to the room at once from hearing him coughing spasmodically, and on being asked what was the matter, he pointed to the empty vials, labelled with the names of the medicines, standing on a table near him. An hour passed before an attempt was made to give him anything, when some person present suggested the idea of giving him vinegar and water, of which he swallowed a few spoonfuls. His condition appeared so hopeless to the family that they thought he could not survive until a messenger could reach a physician, being distant eighteen miles to the nearest.

At noon, finding he did not die, I was sent for, and reached the house of the patient at five o'clock in the evening, ten hours after he had taken the mixture. Found him covered with a profuse perspiration; pulse quick and full; eyes insensible to light, and pupils very contracted; stertorous respiration, with mucous rattle; in short, having all the symptoms of profound narcotism.

I attempted to give him some water, for the purpose of seeing if he could be made to swallow an emetic, but, on trial, I found I could not do anything in this way. I proceeded then to apply mustard to the spine, extremities, and chest, and although the mustard plasters caused vivid redness of the skin wherever applied, the patient showed no disposition to merge from the comatose sleep.

At seven o'clock, finding no improvement, it occurred to me to try the effects of dressing him in clothing saturated with a strong infusion of coffee, after the same manner that we use iodide of potassium, sulphur, etc.

A strong infusion of coffee was prepared, and a linen shirt and pair of drawers were allowed to remain in this for half an hour, and being partially dried, were put on him, and then covered with two blankets. In about thirty minutes the patient moved uneasily about in the bed, and again became quiet. Ten minutes after this he turned suddenly to one side, and vomited profusely, and asked for water. During the next hour he vomited frequently and freely.

For the purpose of combating the effects of the morphine, I gave him, during the night, one drachm of bromide of potassium in divided doses.

When once aroused from the comatose state, he evinced no disposition to return to it, but conversed naturally, and during the rest of the night slept very little. I feared he would suffer from the irritant effects of the undiluted chloroform, on the coats of the stomach, but up to nine o'clock next day he made no complaint. I have since heard he recovered without an untoward symptom.

## LIGHTNING STROKE.

DR. C. H. ALDEN, U.S.A., reports (Circular No. 3) a case, of which the following contains the essential outlines. E. W., aged 60, was struck whilst on horseback, and very shortly afterwards brought in. The horse was killed. The man was totally insensible but very restless, tossing, and resisting efforts to remove his wet clothing. His surface and extremities were cold, his pulse very small and feeble. There was a superficial, nearly vertical wound of the right scalp, looking as though made with a sharp point; a chain of large, irregular vesicated spots extended down the right ear over the neck, chest, and abdomen to the penis. There was also a similar spot on the right thigh and superficial abrasions on both thighs. His felt hat was much torn and burnt of the right side, his pantaloons burnt corresponding to the thigh wounds; his shirt somewhat torn in front. He was wrapt in blankets, and whiskey administered, which he swallowed without difficulty. In the afternoon slight vomiting occurred, and his pulse grew stronger and fuller. During the evening and much of the night, he was restless, muttering incoherently, and having involuntary passages. The next day his condition was much the same, but he was quiet a good deal of the time, and his pulse fuller, surface warmer; a little fluid trickled from the right ear. Weak milk punch and beef-tea were ordered. In the afternoon he opened his eyes, looked round intelligently, but did not speak, and in a few minutes became again unconscious; at 7.30 P.M. pulse, 72; respirations 30; temperature, 97°. He died at midnight. Post mortem rigidity came on in five hours. At the autopsy slight bloody infiltration of the muscles, below the scalp wound, was found. A very slight fissure was found inside calvarium corresponding to the external wound. Between the bone and the dura mater was a firm, black, circular clot, one-fourth of an inch in thickness, and two inches in diameter; opposite the centre of the clot was a minute opening in the dura mater. The brain beneath the clot was disorganized for about two inches in diameter, and extending into the ventricle. Nothing else abnormal was anywhere discovered.

## POISONING BY MURIATIC ACID.

MARIA G., aged 21, took December 5, 9 A.M., about a quarter of an ordinary tumblerful of commercial muriatic acid. The draught was followed by immediate burning pains in the throat, and was partially vomited after a few moments. Shortly afterwards she drank very freely of milk, which was immediately rejected, and in about fifteen

minutes magnesia was very freely exhibited. About midday she was taken to the hospital. At 6 P.M. the pulse was calm, rather full, the temperature normal. There was a constant burning pain of lips, mouth and throat, with inability to swallow, and constant nausea and vomiting. The next day the lips, mouth, and tongue were found to be nearly deprived of their epithelium, red, and inflamed, with a coating on the dorsum of the tongue looking like coagulated albumen. The teeth were very white. The fauces and throat were cedematous, with diffuse tumefaction and redness, and upon the velum, the pharynx, etc., was an exudation exactly resembling the false membrane of diphtheria. There was also profuse salivation, difficult deglutition, and persisting vomiting, with severe epigastric pain and tenderness, but the abdomen generally was soft and indolent, and there had been a normal stool free from blood. There was no fever, and an analysis of the urine did not result in the detection of anything abnormal. The respiration was peculiar, with a difficult noisy inspiration, and an easy expiration. The voice was perfect, showing that the acid had not penetrated to the vocal chords, but had only affected the superior part of the larynx, to whose swelling the disturbance of respiration was due. The treatment consisted in the exhibition of alkalies and milk. There was gradual amelioration, and on the fifth day the inflammation of the mouth was very much lessened. By the tenth day all respiratory trouble had gradually died out. Her gastric symptoms had very much subsided, but not entirely disappeared. The report of the case was made on the tenth day, matters having progressed sufficiently to insure final recovery.—*Bulletin Général de Thérapeutique*, October 30, 1871.

**Death from Syrup of Poppies.**—In the London *Pharmaceutical Journal* of October 3d are detailed two cases in which death was caused by syrup of poppies. In one case a teaspoonful was given to a child eighteen weeks old, at 6 P.M., death occurring about 8 A.M. the next day. The other victim was a child five weeks old, to whom three parts of a teaspoonful were given.

**Cotton-Wool as a Means of Filtering the Air.**—Mr. Brown has found that if air be drawn through cotton-wool the latter will retain all the ammonia. He found that at a temperature of 15.9° C., and a pressure of 755.7° mm., the cotton-wool will retain 115 times its own weight of ammonia.—*Zeitschrift des Allgem. Oester. Apoth. Vereins*, November, 1871.

**Death from Hypodermic Injection of Morphia.**—In the *British Med. Jour.* of March 30, is recorded the case of Mary P—, aged 50, who received with fatal result a hypodermic injection of  $\frac{1}{4}$  grain of morphia for the relief of sciatica.

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### ON THE TESTING FOR HYDROCYANIC ACID.

IN a recent work upon this subject, Almén, of Upsala, ranks the recognition of the prussic acid odor in suspected poisoning as of little value as a means of recognition; whilst the guaiac test he states to be of very great importance, and that if it fail to give any tokens of prussic acid there is no use of looking further. For the separation of the prussic acid from the organic matter, he thinks the “streams of gas” only useful when a ferrocyanide compound is being dealt with. In the same way he speaks about the distillation with a water-bath, which moreover consumes a great deal of time. He prefers a distillation with a bath of chloride of calcium, saltpetre, or, still better, paraffin. In this way the distillate comes over more rapidly, and whenever three cubic cm. are obtained the receiver must be emptied. Where the hydrocyanic acid only amounted to a fraction of a grain, Almén found the fifth and even the ninth distillate contained traces of the acid. The distillation must therefore not be interrupted too early. Amongst the various reactions he found the “sulpho-cyanide reaction” the most sensitive. As our best toxicologists agree, he states that the evaporation of the liquid in which hydrocyanic acid is sought for, and to which previously some drops of sulphuret of ammonia have been added, must be carefully conducted by a slow fire, and is best performed in a porcelain dish, with a water-bath; and on account of the volatility of the sulpho-cyanide of ammonia, the fluid should not be evaporated to dryness.

There is also another difficulty: during the evaporation, the sulphuret of ammonium being in contact with the air suffers decomposition, with the formation of sulphuric acid, sulphurous acid, sulphuretted hydrogen, etc. Now, if a drop of the chloride of iron be added, instead of the beautiful red and permanent sulpho-cyanide reaction a violet or brown is produced, which rapidly disappears; whilst the perchloride of iron is reduced to the protochloride, which has not the power of producing the sulpho-cyanide reaction. This, however, can be obviated by using more of the chloride of iron; but the liquid may become so deeply colored as to obscure the sulpho-cyanide reaction.

All these troubles may be avoided by the following method of Al-

mén. To the distillate to be examined a drop of dilute soda lye is added, then sulphuret of ammonium, and the whole evaporated to dryness over a water bath. If prussic acid were present in the distillate it is represented in the residue by sulpho-cyanide of sodium, which is not volatile at the temperature of the water-bath. If the residue be dissolved in a little water, acidified with  $\text{SO}_2$ , an intense red color is produced by the addition of the perchloride of iron. The liquid should be allowed to stand a few minutes after the addition of the sulphuric acid, before adding the iron.

To produce the Prussian-blue reaction, Almén puts two cubic cm. of the distillate in a test-tube, and adds one or two drops of an oxide containing solution of copperas (somewhat oxidized by exposure to air, or a solution of copperas containing a little of chloride of iron), then two or three drops of a solution of soda; agitating this, he after five minutes adds so much sulphuric acid as is necessary to dissolve the precipitated iron oxides. The mixture will then be, if no prussic acid have been in the distillate, reddish yellow and clear; if prussic acid be present it will be green or more or less blue, and after one or two days Prussian-blue will separate as a flocculent precipitate. In this reaction it makes little difference whether the copperas solution or soda lye be added first, excepting that according to Almén if the sulphate of iron precede the soda, the oxides are more readily dissolved by the sulphuric acid. Care must be taken not to add too much of the soda, as it interferes greatly with the reaction. Heating the mixture to boiling, Almén states to have little influence on the reaction. This test is delicate, but not so delicate as the preceding one. In a comparative experiment with a very dilute water of bitter almonds containing only  $\frac{1}{1000}$  grain of the acid in 1 c. cm. the first test showed very distinctly with 1 c. cm.; the second only so far as to produce a greenish color with 2 c. cm. Almén also tried the test of Draggendorf,—a blood-red color developed by means of an alkali and picric acid,—and found that the test was not only far behind the other two in sensitiveness, but that various other reducing agents, such as sugar, sulphuric acid, etc., would under like circumstances develop the same color; and that even with distilled water, picric acid, and an alkali alone, the color could be developed after a time. The test dependent upon the production of cyanide of copper was found more reliable, but less delicate than the Prussian-blue reaction. It needs for its best performance the avoidance of high temperature, and the use of but little soda. Almén details a case in which the stomach and brains of a person poisoned by the acid were given him for examination. The brain exhaled a strong, the stomach a very weak odor of prussic acid; and the same difference was found on testing.

Almén describes the experiments made by Eckmann and himself for testing with Schönbein's sulphate of copper papers and the forcing in of air, and states  $\frac{1}{1000}$  grain of hydrocyanic acid in seven ounces of diluted urine is readily detected thereby. According to their experience the copper solution used should not be stronger than  $\frac{1}{4}$  per cent. and should be colorless. Non-volatile substances cannot interfere with the trustworthiness of the test, and of volatile ones only such are found in the stomach as are easily set to one side. Yet Almén considers the test not to be relied on as the main one, but only as corroborative.

In endeavors to isolate prussic acid from the contents of the stomach Almén thinks it a matter of indifference which acid be used to neutralize the alkalinity.

Almén also tried instead of distillation the use of streams of air to separate the prussic acid from organic mixtures and carry it into a weak soda solution, and found that at ordinary temperature very minute quantities only were carried over. But if no ferro or ferrieyanide were present the mixture could be brought to a boiling point, and then the streams of air, although it takes a very long time absolutely to exhaust the organic mixtures by them, were even more satisfactory than distillation. By this means the presence of 1 milligr. of the acid in 200 c. cm. of urine could be distinctly proven.

Dr. Br. (the author of the notice) then states that he has recently had occasion to go over the subject experimentally, and that his results confirm those of Almén, and that with the sulpho-cyanide reaction he was enabled to recognize  $\frac{1}{100}$  milligr. of prussic acid.—*Zeitsch. Oester. Apothek.-Vereins*, Dec. 10, 1871.

**On the Adulteration of Beer.**—In *Schmidt's Jahrbücher* for Dec., 1871, is an elaborate review of the recent literature of this subject. It is too long to be translated, and being composed of a series of abstracts chiefly, cannot itself be profitably abstracted. We therefore simply give the reference for those interested in the subject.

**On the Violet Sediment of Urine.**—In the *Journal de Pharmacie et de Chimie*, Dec., 1871, C. Mehu has an interesting paper upon this curious principle, but we must content ourselves with mere reference, as the subject is scarcely within the scope of the Journal.

## TESTS FOR NARCEINE.

BY M. STEIN.

A long time since M. Pelletier and M. Wenkler proposed iodine as a test for narceine, as it strikes with it a blue color, similar to that of



iodide of starch. But there are difficulties in the application of this test. If too much iodine be added a brown color results, and the blue is not developed until the excess of iodine is neutralized by ammonia. Then, again, if the ammonia is sufficiently in excess, it destroys the color by dissolving the narceine. All the solvents of narceine act in the same way.

M. Dragendorff has announced that the solutions of narceine give, with the double iodide of zinc and potassium, a crystalline precipitate. It is proposed to make a simultaneous use of these two reactions. It suffices to add to the solution of the double iodide a small quantity of watery solution of iodine; afterwards the whole is shaken with ether to remove the excess of iodine. Treated with this a liquid containing only a small quantity of narceine acquires a distinct blue color.

No other alkaloid of opium gives such a reaction.—*Journal de Pharmacie et de Chemie*, January, 1872.

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#### POISONING BY CARBOLIC ACID.

Jos. M., æt. 32, drank, on the 20th of July at 10 A.M., an unknown quantity of a solution of phenic acid, which he mistook for wine. Immediately afterwards he was seized with nausea, cold sweat, stupor, and unconsciousness. Some magnesia was given, and at 12.30 A.M. he was brought to the hospital in a state of profound insensibility, with noisy tracheal râles in breathing, and apparently death was imminent. Mustard poultices were applied to the whole surface.

At 5 P.M. the temperature had risen nearly to normal, the coma and complete relaxation of the limbs persisted. There was anæsthesia of the skin and mucous membrane of mouth, nose, pharynx, and bladder, and complete loss of reflex excitability. The cornea and conjunctiva were insensible, the pupil contracted. Respiration 48, stertorous, with tracheal râles; pulse 128, small. The heart beat convulsively, with considerable force. He had passed no urine, but a small quantity was obtained by the catheter. It was yellow, with a violet tint by reflected light, and smelt strongly of carbolic acid. On its surface were some oily drops. Some drawn blood was of a singular brown color, and smelt strongly of the acid. The clot was soft, diffuent, and did not contract. He died about 7.30 P.M. by gradual asphyxia.

*Autopsy* 36 hours after death.

In spite of a temperature of 30° C. the cadaver was well preserved, and in all its parts smelt strongly of carbolic acid. No distinct lesion of the mucous membrane was found above the stomach, the mucous membrane of which was thickened; with black, cauterized spots, and elsewhere deeply congested, and in one or two places there were submucous

hemorrhages. It was not ulcerated. The kidneys were deeply congested. Under the fibrous capsule, and in the cortical portion, were some spots of effused blood. The renal tubuli were perfect, excepting that their epithelium had become fatty, and completely degenerated, as in phosphorus poisoning. No other abnormalities of moment were found. The author thinks that the carbolic acid acted as a "hypotherisant." The preceding report is by M. Rendu, *interne*; the following by M. Patrouillard, pharmacien en chef:—

*Examination of the Urine.*—The urine was agitated with some cubic centimetres of pure ether, and allowed to stand; the ethereal layer was then removed with a pipette, and evaporated in a glass vessel. A minute oily residue was left, having the physical properties of phenol. A little of it dissolved in water gave a deep violet color with perchloride of iron, a bluish tint with ammonia and hypochlorite of lime. The remainder was treated with fuming nitric acid and heat, and after a vivid reaction was converted into a yellow solid, capable of imparting its color to water and to silk. Lastly, the yellow solution gave, when heated, after the addition of cyanide of potassium, a red tint. All these reactions are characteristic of carbolic acid.

An attempt to separate phenol by shaking some of the water containing it with animal charcoal failed.

Albumen was also found in the urine.

*Examination of the contents of the Stomach.*—There were 350 grammes of liquid and finely divided solid matters, of a brown color, repulsive odor, and decidedly acid reaction. On the surface were some reddish oily drops. The acid reaction was of double interest, because the solution ingested was a phenate of soda. The liquid contents were distilled to dryness by means of an oil-bath, and an aqueous liquid was obtained, which gave a blue color, with ammonia and hypochlorite of lime.—*Journal de Pharmacie et de Chimie*, Dec., 1871.

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#### ON THE BLACK URINE OBSERVED AFTER THE USE OF CARBOLIC ACID.

P. HAUXMAN examined the urine of a woman, who had been long treated with a watery solution of carbolic acid. In mass the urine was black; in a test-tube it had a blackish-brown color. Its sp. gr. was 1.027; its reaction neutral. By the addition of chlorine water it became brownish-yellow; sulphuric acid, nitric acid, and acetic reddened it. On heating, a deposit was precipitated which was redissolved on the addition of an acid: yellow prussiate of potash did not affect the urine: after having been shaken with the urine, chloroform separated colorless, and did not afford any biliary reaction with sulphuric acid.

There was no albumen, nor any blood-corpuscles in it. By boiling with an alkali the color was rendered paler, and did not return when the alkali was saturated with an acid. Hauxman believed for a time that soluble hæmic globulin, which can produce this black coloring, was the cause of the color in the carbolic acid urine; although on account of the full clearing up on heating after the previous acidifying he abandoned this view, especially as the odor of carbolic acid was given off during the heating.

Later Almén and Waldenström, from a similar dark urine, obtained, by distillation with sulphuric acid, a product which smelt strongly of carbolic acid, and gave, with chloride of lime, a blue color. When a portion of the distillate was shaken with ether, the latter left, on evaporation, oily drops of carbolic acid.—*Zeitschrift des Allgemein. Apothek. Vereins*, January 10, 1872.

### POISONING BY OIL OF WHITE CEDAR—BY NITRATE OF POTASH.

DR. F. K. BAILY reports the case of a girl, æt. 15, who took 16 drops of the oil of white cedar, and directly afterwards fell unconscious. He found her shortly afterwards in clonic spasms, and forcing open her jaws, poured in some castor oil, which vomited her. The clonic spasms then yielded to epileptiform convulsions lasting at intervals for several hours. Long-continued irritation of the stomach resulted, and it was a year before health was fully recovered.

Dr. Baily also reports the following:—

G. B., æt. 24, very robust, weight 150 lbs., sanguine temperament, Irish, took by mistake about  $\frac{3}{4}$  iv. of saltpetre in solution. Soon afterwards vomiting occurred, and was continued. When the doctor first saw him he was suffering intense burning pain in the stomach and abdominal region. The pulse was small and wiry, feet and hands ice-cold, but the head exceedingly hot. Nausea, but without vomiting, continued. The stomach appeared to be empty, or nearly so, and the salt, which had not been rejected, probably had passed to the duodenum. I at once gave demulcent drinks, and applied sinapisms to the extremities and the pit of the stomach. Reaction came on in a few hours, when it seemed as if the sufferer was in a furnace. The pulse became full and bounding, the eyes congested, the face red and burning hot, and a raving delirium set in before dark.

At this juncture a vein was opened at the bend of the arm, and the blood allowed to flow from a large orifice, till the pulse yielded. In a few hours collapse succeeded, and the pulse was scarcely perceptible.

For some time it was thought he must die, but, by giving diffusible stimulants, reaction came on gradually, and a second exacerbation of excitement occurred, nearly equal to the first. A second bleeding was not resorted to, but opiates were freely given, together with castor oil. On Tuesday the bowels began to move freely, and at night collapse recurred to a more fearful degree than before.

He became insensible to surrounding objects, and for some hours nearly pulseless.

Stimulants were given carefully, and the case closely watched. All hopes of his

recovery were abandoned till some time on Wednesday, when reaction returned. From this, convalescence commenced, but it was two or three months before there was a complete restoration to health.—*Medical and Surgical Reporter*.

**Hydrate of Chloral.**—In the *Pharmaceut. Journal and Trans.* of Nov. 25 is reported a case of death from chloral hydrate.

Dr. I. A. Watson reports (*Med. and Surg. Reporter*, Jan. 27) the case of a lady suffering from facial neuralgia, to whom he gave, Jan. 1, in the morning, two doses of chloral (all the doses 10 grs.); in the afternoon, one dose; in the night, two doses; on Jan. 2, in the morning, as she was still suffering, two doses were administered; about 2 p.m. one more dose, so that on Jan. 1, 50 grs. were taken, and on Jan. 2, 30 grs. After the last dose she commenced to feel numb, and passed into a state of unconsciousness and profound prostration lasting over two hours, during which the doctor believes her life was only preserved by the most assiduous and constant treatment.

Dr. J. Butts reports a case (*Philadelphia Medical and Surgical Reporter*, February 1) in which a hysterical woman took 3j. daily for six consecutive days, and then took 3j. in the course of a night, without fatal result.

**Governmental Interference to prevent Alcoholic Poisoning.**—The Swedish national drink is now beer, although it used to be spirits; and the Swedish nation may be congratulated as having become one of the most sober people instead of the most drunken. This happy change arises partly from the fact that brandies have become much dearer since an excise duty of 1s. 4d. per gallon has been levied, and in addition to this check, a tax imposed on the retail trade, and a Permissive Bill passed, by which any parish or town can prohibit the licensing of brandy shops or restrict their number. In the manufacturing district of Gothenburg a society has been formed for promoting sobriety, and one of their modes of action is to farm the brandy licenses. The result of this has been that new drinking shops, pure and simple, are seldom opened, and most of the old ones are turned into eating houses. Moreover, no brandy is sold on credit, or to any persons who are not of adult age, while strict laws punish those who allow drinkers to become intoxicated. Whatever may be the advisability of a Permissive Bill, the methods here adopted to check drunkenness are very successful, and might be imitated in our future legislation. The profits arising from these shops are handed over to the municipal authorities, and are spent in diminishing the municipal taxation, sometimes to the amount of 10,000*l.* a year.—*Food Journal*.

**Animal Charcoal as an Antidote for Phosphorus.**—M. Eulenberg and Vohl have demonstrated that animal charcoal will absorb phosphorus as it does alkaloids, and that it may be successfully used for

this purpose in cases of poisoning. They give it in the form of pills, because in this way it can be given in least liquid, and also because when the pills are made from the animal black by means of mucilage of tragacanth, they preserve their properties for many years.—*L'Union Pharmaceutique*.

**New Test for Muriatic Acid.**—M. Bouis states that he has found that when muriatic acid is heated with nitrate of potash, nitro-muriatic acid is formed, but not when chloride of sodium and no free muriatic acid is present. If the nitrate of potash be replaced by the chlorate the reaction is much more sensible. Taking advantage of this, he has devised the following process, and found it to work well.

The suspected liquid is filtered through muslin, and afterwards through paper moistened with acetic acid. To it are then added some crystals of chlorate of potash, and in it are suspended some strips of gold leaf. The mixture is then heated for some hours by the water-bath; if any hydrochloric acid be present the gold will be chloridized.

In this way, M. Bouis states that he has been able to recognize some centigrammes of hydrochloric acid in a large quantity of liquid.—*L'Union Pharmaceutique*, December, 1871.

**Wound of the Innominate Artery.**—In the *American Journ. Med. Sc.*, January 1, Dr. R. W. Erwin details the case of a man who walked fifty-nine yards after receiving a stab with a knife, which divided the arteria innominata in two-thirds its diameter, close to its bifurcation into the right subclavian and carotid arteries, and penetrated through the œsophagus and trachea into the vertebra. Immediately after the reception of the wound the blood gushed from the nose and mouth of the man.

**Method of Discovering Quinia in the Urine.**—After stating that the ordinary tests are not applicable for the finding of quinine in the urine, and the method proposed by Folwarezny requires at least a litre of the urine, and is very difficult and laborious, Dr. D. Vitali proposes the following as a very practicable plan.

Add to eight to ten cubic centimetres of the urine five to six c. c. of ether, and afterwards eight to ten drops of ammonia, or, better, a solution of a sixtieth of caustic soda. Agitate the whole for some time. When the ether has separated from the quiescent liquid as a superior layer it is to be removed by a pipette, placed in a small capsule with a drop of dilute pure hydrochloric acid, and evaporated at a very gentle heat. After cooling, one or two drops of saturated chlorine water are put in the capsule, and rubbed with a glass rod over the bottom and sides to dissolve the scarcely visible residue, and a drop of ammonia added. If the urine contain five centigrammes of the alkaloid to the



**Fatal Cerebral Congestion Caused by Chloral.**—Dr. George G. Needham reports the case of a woman, æt. 50, suffering from mental unquietness amounting to insanity, who took chloral in 30-grain doses, as follows:—

On the 21st, at 5:30 P.M. and at 11 P.M.; on the 22d, at 10 A.M. and 3 P.M. (each a half-dose); on the 23d, at 1 A.M., at 8:10 A.M., and at 1:30 P.M. On the evening of the 22d, before taking the fourth dose, she was out of bed and moving about. On the morning of the 23d she seemed to be awake. "On the 23d, at 7 A.M., I found her," says the doctor, "sleeping, and with a somewhat rapid pulse, and at 6 P.M. she was still sleeping. On the morning of the 24th I began efforts to waken her; pulse, 108; respirations, 27; pupils moderately contracted. These efforts were continued through the day and following night without avail. The most that could be done was to cause groaning, momentary opening of the eyes, and futile efforts at articulation. During the night  $\frac{1}{10}$  gr. of strychnia was given hypodermically in three doses. Up to 4 P.M. of the 25th her condition remained stationary; breathing, 28 to 30, sometimes stertorous, but mostly quiet; nostrils faintly sensitive to ammonia; pupils contracted; conjunctiva sensitive; feet warm; voluntary motions of limbs hardly perceptible during the day, but much more so during the night. From 4 A.M. her condition rapidly grew worse; her pulse rose and weakened, her coma became more absolute, and her respiration more stertorous and rapid. She died at 3:55 P.M."

At the autopsy, the brain alone was examined. It was found everywhere deeply congested, but otherwise apparently normal, save only in the presence of a sero-gelatinous exudation in the meshes of the pia mater.—*Psychological Journal*.

**Colchicum Poisoning.**—Case of two men who had swallowed about a half pint each of "tr. colchici," and were first seen by Dr. Jno. H. Garner about twelve hours afterwards. One, Robert, was exhausted, pale; cold sweat on his forehead, occasional hectic flush in cheek; pulse 160; severe intermittent pains in abdomen, with great tenderness; eye red, watery, pupils dilated; tongue dry, brown in centre, red along edges; intense headache; anxious, haggard countenance; complained of fulness of chest; had bloody sputa. The other case offered similar symptoms, but milder. They were treated with opium and bicarbonate of soda, both given freely. The first gradually sank, and died exhausted, coma preceding death some three hours; the other gradually recovered, but never regained his former physical vigor, and was troubled with nocturnal emissions. The autopsy of Robert was made thirty-six hours after death. Bloody exudation

from nose and mouth. There had been an emission of semen. "Vessels" (veins?) of brain and its membranes everywhere gorged with blood. Lungs "much engorged," dark, about four ounces of liquid in each pleura. No clot in the heart. Abdomen: whole length of alimentary canal, from pylorus to anus, intensely inflamed, especially the jejunum. Liver very pale, gall bladder filled to excess. Spleen filled with dark blood. Venæ portæ full, but not engorged. Kidneys and bladder about normal. In discussing the case Dr. Garner states as a result of his chemical observation, that when colchicum is given with acid, it is much more apt to purge than when united with an alkali.—*Canada Lancet*, April, 1871.

**Poisoning by Carbolic Acid.**—Messrs. Jeffries and Hainsworth were called to a man, aged 65, who had taken carbolic acid, estimated to be from one-half to an ounce in quantity. He was seen probably within half an hour after the taking of the poison—certainly within that period after the first symptoms of its action. He was found insensible, with contracted pupils; his pulse labored, forty to fifty per minute. The mouth and throat were full of a thick viscid mucus. Respiration was irregular, stopping at times and starting again, although the heart's pulsations were inaudible. He died about fifty minutes after the taking of the poison.

*Post-mortem*, twenty-eight hours after death. The general aspect was that of a person dead of suffocation. Much fluid blood flowed from every divided vein, and no clotted blood was found anywhere, save in the lungs, where were small, fine black nodules of coagula. The epithelium from lips to pylorus was white, that of the stomach also shrivelled into little granular masses. The rugæ of the stomach were very prominent and hard. The contents of the stomach smelt strongly of the acid, and answered the British Pharmacopœia test. The larynx, bronchi, and trachea were literally filled with transparent mucus streaked with blood. All the viscera were congested, and of a darkened color.—*Med. Times and Gazette*, April, 1871.

**Poisoning by Carbolic Acid locally applied for Necrosis**, by W. H. WHITE, M. D.—The case was one of compound fracture of the thigh, in which carbolic acid injections had been used to lessen suppuration. "After the bandages and splints were removed, the amount of discharge was much less profuse, I suppose on account of pressure being removed, admitting of greater freedom of circulation, and of some of it being absorbed. Be that as it may, I was called that evening, an hour or two after he had used the carbolic acid. Upon reaching his bedside I found him with a very feeble and flickering pulse, and breathing with much difficulty; countenance pale and anxious; feet



and hands cold. Brandy was given internally, with external frictions and free washing out of the sinuses. In three or four hours the patient was comfortable. The next day his urine smelt strongly of carbolic acid."—*New York Medical Gazette*, April 15.

**Chloral-Hydrate.**—Dr. H. W. Fuller describes a number of cases in which alarming effects followed the exhibition of 30 grains of chloral, besides one fatal one. The latter occurred in a young woman, previously in good health, to whom the remedy was prescribed for hysterical symptoms occurring at the menstrual period. The dose was taken at 10 A.M. She immediately became much excited, and complained of pain in the chest. In an hour she fell asleep, slept heavily all night, and continued so doing all the next morning, although every effort was made by the medical attendant to rouse her. When first seen by the latter the respiration was deep and sighing, the pulse imperceptible at the wrist. Under the use of external and internal stimulants the pulse became slightly apparent. At 2 P.M., when Dr. Fuller saw her, she was very pale and cold, with widely-dilated, very sluggish pupils, and heavy, distinctly sighing breathing; the pulse was barely perceptible, the heart beating 120 a minute, with clear sounds and normal rhythm, although its action was manifestly very weak. The abdomen was flat and soft, the limbs moderately relaxed. In spite of active stimulation she died the next morning, without ever having moved a muscle or shown the slightest sign of consciousness after having fallen asleep.—*London Lancet*, March 25, 1871.

**Note on the Physiological Effects of Carbonic Oxide.**—By Prof. A. R. LEEDS.—I accidentally respired, some time ago, a quantity of pure carbonic oxide. The gas was contained in a quart bottle, from which I inhaled certainly less than a pint—probably a quantity not exceeding a gill—into my lungs, previously exhausted through expiration of atmospheric air. For a moment no change of mental impressions or bodily feelings was noticeable. The next, without any intermediate condition, I was struck senseless to the floor. Fortunately, the bystanders rushed immediately forward, tore open my clothing, poured water upon my wrists and head, and applied violent friction to my limbs. The pulse had stopped beating, or beat so feebly that in the agitation of the moment it was imperceptible; the chest had ceased to expand and contract, the complexion had assumed the livid hue of death, and the temperature of the body was rapidly falling. The operation of the carbonic oxide was so immediate as to prevent the lungs from throwing off the single charge they had received, and the shock arising from the remedies employed probably enabled them to

do so. A slight nausea which passed off in the course of a few hours, and a dulness and oppression in the crown of the head, lasting some time longer, were the only effects which remained after restoration to consciousness.—*Philadelphia Med. Times.*

**Transfusion of Blood in Poisoning by Carbonic Oxide.—**

Prof. Hüter, of Greifswald (*British Medical Journal*), related at a meeting of the Medical Society of that place, a case of poisoning by carbonic oxide, in which he successfully employed transfusion of blood. The patient, a man 26 years old, was found insensible after four or five hours' exposure to the gas. Artificial respiration had failed of success. When Dr. Hüter arrived, half an hour after he was found, the respiration was very superficial and intermittent, the pulse small and frequent, the pupils did not act, and the cornea was quite insensible. A pound of defibrinized arterial blood was injected into a vein of the patient's left arm, and, respiration having by this time ceased, artificial respiration was kept up while the injection was being given. After about half the blood had been injected, the blood flowed more freely from the cut vein. At the end of the injection the pulse had become fuller and slower, and natural respiration had returned. In half an hour the pupils were sensitive to light, and the patient moved his arm a little. For four hours the tongue had to be held forward, when its tendency to fall back ceased, and consciousness returned. The recovery was complete on the fifth day.

**Acute Atrophy of the Liver, and Phosphorus Poisoning.—**

Dr. Bollinger describes (*Centralblatt für die Med. Wiss.*, April, 1869, and *Brit. and For. Med.-Chir. Review*, October, 1870) two cases of phosphorus poisoning, and two others of acute yellow atrophy of the liver, as determined by both macro- and microscopical study, and gives, thereupon, a summary of these diseases, and especially of the opinions hitherto brought forward as to the origin of the so generally concomitant icterus. Contrary to numerous assertions, the author notes the absence of the overgrowth of small cells of the interstitial tissue of the liver. In regard to the icterus, the author declares for himself that it is in both diseases a resorption-icterus, and certainly not, as Virchow has in most cases made it, set up by swelling of the mucous membrane at the outlet of the ductus choledochus, but by parenchymatous inflammatory fatty degeneration of the liver-cells, and the throwing off of the fattily-degenerated epithelium of the fine biliary canaliculi. The theory of the hæmatogenous icterus appears very doubtful, as in the liver the effect was always sufficient to demonstrate the origin of the icterus.

**Sudden Death after Chloral.**—Mr. H. Norris reports the case of a woman, violent, hysterical, dipsomaniac, who took 712 grains in nine days, 260 grains of this being taken in the last 35 hours. In the evening of the day preceding her death she had been out to tea; between 10 and 11 P.M. she took 40 grains, and 1 and 2 A.M. 36 grains, and at daylight another 36 grains. Between 10 and 11 A.M. awoke and went downstairs to breakfast; about 12 was found in bed, vomiting; was left five minutes, and was then found dead on the floor. At the autopsy no smell of chloroform could be detected. The heart was found somewhat pallid; the ventricles empty; the auricles partially distended by dark semi-coagulated blood. The stomach, liver, heart, kidney, and spleen were chemically examined one hundred and thirty hours after death. They were remarkably well preserved. On distillation with caustic soda, chloroform was obtained from the contents of the stomach and from the liver, but not from the tissues.—*London Lancet*.

**A New Test for Arsenic.**—According to the *Pharmaceutical Journal and Transactions*, Bethendorff has discovered a new test for arsenic, whose delicacy is such that one part of the metal in a million of the solution can be detected by it, and the presence of antimony does not affect it. The suspected liquid is mixed with hydrochloric acid until fumes are apparent, when chloride of tin is added, which produces a basic precipitate containing the greater part of the arsenic as a metal mixed with oxide of tin.

**Dose of Chloral.**—Dr. Richardson (*Pharmaceutical Trans.*) believes that it is not prudent to administer more than 120 grains of chloral-hydrate in 24 hours, and that 180 grains is a fatal dose, 120 a dangerous one. [50 grains is a dangerous dose under ordinary circumstances.—Ed.]

**Turpentine and Phosphorus.**—MM. Höhler and Schimpf have reported in the *Berliner Med. Wochenschrift* that they have repeated the experiments of Personne with the following results: Commercial oil of turpentine is a good antidote to poisoning by phosphorus. There is no fatty degeneration of the tissues, nor is there any free phosphorus found in the system of the animals experimented on. Phosphorus and turpentine oil form in the stomach a compound resembling spermaceti, which is readily excreted.—*Med. and Surg. Journal*.

**A Delicate Test for Iron and Copper.**—The alcoholic tincture of logwood will produce a blue or bluish-black tint in water which has been run through iron or copper pipes, when neither tincture of galls, sulphocyanide, nor the ferrid and ferrocyanides of potassium show any reaction.—*Richmond Journal*.

**Arsenious Acid Poisoning.**—In the *Chicago Pharmacist* of February, 1872, Dr. Bartlett reports five cases of poisoning by arsenious acid, which, however, offer nothing very novel.

**Poisoning by Eating of *Cicuta Maculata*.**—In the *Journal of Materia Medica*, May, 1871, Dr. Charles A. Lee describes the cases of two boys who had eaten the roots by mistake, about 2 o'clock in the afternoon. In the course of about an hour both began to complain of sickness of the stomach and dizziness. They then started for their homes. Both fell on the way, and were picked up unconscious and in violent spasms. In this state they were observed to vomit a frothy glairy fluid; but none of the roots were noticed in the matters ejected. The Perry boy was less violently affected than Powell, and soon recovered. I saw Powell soon after 5 o'clock, and found him in severe spasms. Every muscle in the body was affected with powerful clonic spasms; contracting, and then partially relaxing with wonderful rapidity. His movements required four strong men to control; his face was very livid, and even purple from congestion; head hot; the eyes wild and staring, with the pupils dilated to the utmost extent; there was no cessation to the spasms; there was scarcely any pulse to be perceived; a bloody froth issued from the mouth and nose, while the body was covered with sweat.

One drachm of powdered ipecac was given as soon as it could be got down by feeding with a spoon; he was wholly speechless and evidently unconscious. In the course of half an hour 3 ij. sulph. zinc were given in solution, and about two pints of blood taken from the arm, which was black and tar-like in appearance.

As there were still no attempts at vomiting, I poured several quarts of ice water over his head, which with the bleeding relieved the heart and congestion of the face and head; still there was no diminution in the size of the pupils; the eyes glazed, while the expression was staring and wild. In spite of the means employed the convulsions continued, though less strong, for several hours, with scarcely any intermission; with occasional convulsive efforts to vomit; during which nothing was ejected but a little water, the medicines administered, and a few small pieces of the poisonous root that had been swallowed. About 8 p.m. the pulse became fuller and distinct, and 80 per minute; the patient unconscious; pupils much dilated; with only occasional spasms, not severe. Gradually, the limbs and body became comparatively cool; the pulse 130, almost imperceptible; brandy was given freely, and warmth applied to the feet and surface generally. The pulse at times grew stronger, very frequent, then weak, but the breathing was mostly

laborious and stertorous, while the heart beat tumultuously. The face became pale, and the extremities cold. Some beef-tea was got down, and this with the brandy and some chloroform were the only remedies given from this time, till death took place at 9 A.M. on the 12th.

*Autopsy* 24 hours after death.

*Rigor Mortis*, considerable—a few crimson patches, and discolorations on the sides of the body; the stomach and small intestines completely empty; mucous membrane healthy and natural in appearance except slight softening; no pieces of the root were found.

*Brain and Membranes* intensely congested; all the sinuses and veins full of blood. There was no effusion within the ventricles.

**The Detection of Alum in Bread.**—At the seventeenth session of the Glasgow Chemists' and Druggists' Association, R. Carter Moffat, Esq., Ph.D., F.R.S.A. (hon. member), delivered a short but highly interesting lecture on "The Detection of Alum in Bread."

He explained some of the many processes recommended by chemists for this purpose, stating that for many years it had been one of the most difficult problems to solve. He (the lecturer) had been engaged some months ago, professionally, to report as to whether alum was really present in some breads, as alleged. His attention was thus drawn to the untrustworthiness of some of the tests and the awkwardness of others; and after performing about two hundred experiments, the matter seemed to him to be as far from solution as ever. He had, however, come upon the process known as Mr. Horsely's, of Cheltenham, which recommends the bread to be placed in vinegar for a short time, the vinegar to be strained off, and a little ammonia to be added to the clear liquor, to neutralize the acid. An alcoholic solution of logwood was then added, which, it was stated, gave the solution a blue color when alum was present. Fourteen loaves had been given him to test, and with Mr. Horsely's process every one of them contained alum; but in experimenting further, he found that the blue color was produced when no alum was present, and that the most reliable test for detecting the presence of alum in bread or flour, was the simple alcoholic solution of logwood, without any of the burning, boiling, or other processes. One hundred and twenty grains of chip logwood, digested in eight ounces of methylated spirits for eighteen hours, then filtered, yielded a solution which, when brought in contact with bread or flour free from aluminium, produced a pale-yellow or straw color, but a dark-red when aluminium is present. With this test he had found that only one of the fourteen loaves contained alum—showing that alum is not used so extensively for the purpose of whitening bread as has been supposed by many.—*Chemist and Druggist*.

**Test for Nitric Acid.**—About a cubic centimetre of pure concentrated sulphuric acid is placed in a watch-glass; half a cubic centimetre of sulphate of aniline (formed by adding 10 drops of commercial aniline to 50 c.c. of diluted  $\text{SO}_3$ , in the proportion of 1 to 6) is poured on drop by drop; a glass tube is moistened with the liquid to be tested, and moved circularly in the watch-glass. By blowing on the mixture during the gentle agitation, when a trace of nitric acid is present, circular striæ are developed of a very intense red color, tinting the liquid rose. With more than a trace of nitric acid, the color becomes carmine, passing to a brownish red. The test is surpassingly delicate.—*Year-Book of Pharmacy.*

**New Test-Paper.**—M. Böttger proposes a new test-paper made from a coloring matter obtained from the leaves of an exotic plant (*Coleus Verschaffeltii*) by digesting for twenty-four hours with absolute alcohol, to which a few drops of sulphuric acid have been added. The paper, prepared in the usual way, is of a splendid red, passing into a fine shade of green by the action of the alkalies or alkaline earth. It is far more sensitive than either litmus or turmeric, is unaffected by carbonic acid, and will indicate the presence of the merest traces of the carbonates of the alkaline earths in water. A moistened strip of paper, when held at the opening of a gas-jet, will turn green if any ammonia be present.—*Cosmos.*

**Strychnine Poisoning from the Eating of Sweetmeats.**—In the *London Pharmac. Journal and Trans.* of July 1 is the report of a case in which a child died in convulsions shortly after eating some chocolate drops. It was proven by analysis that these contained strychnia, and sufficient of the alkaloid was recovered from the contents of the stomach to have caused the death of the child. At the inquest it was rendered very evident that the strychnia had accidentally got into the chocolate during manufacture from being used in the establishment to kill rats.

**Adulteration of Bread with Alum.**—At the City Police Court, Manchester, charges were recently brought against two bakers, of having adulterated bread by the admixture of alum. Loaves of bread, which had been purchased at the shops of defendants, were submitted to analysis by Professor Roscoe, who deposed that he had found in the different samples 13, 12, and 4 grains of alum to the pound respectively. In one case it was submitted that in order to convict it must be proved that the defendant was cognizant of the presence of alum in the flour. The magistrate, however, decided that it was the duty of the baker to take care that the flour had no alum in it. A fine of £5 was inflicted in each case.—*Pharmaceut. Jour. and Trans.*

**Poisoning by Atropia treated with Opium.**—M. Van Peteghem reports a case in which a young lady took an unknown quantity of atropia, which she vomited shortly afterwards. Thirty-five drops of laudanum were exhibited by the mouth, but were mostly vomited, and fifteen were given by enema. The delirium immediately subsided. The doctor left for half an hour and the delirium came back. It yielded again to twenty drops of laudanum. Later in the day the delirium returned and was successfully combated by the same remedy.—*Bulletin Méd. de la Nord de la France—L'Abeille Médicale*, October 2, 1871.

**Harmlessness of Coralline.**—M. Sabourin reported to the French Academy, December 27, 1871, some investigations he had been making on coralline. The conclusion he reached was that this substance was entirely devoid of poisonous properties.—*L'Union Médicale*.

**Opium Poisoning. Belladonna.**—Dr. Newhall reported the case. A young child, of two years, drank part of a bottle of cough mixture, containing one-eighth of a grain of morphine in one drachm. He saw the patient an hour later, when she was fully narcotized, so fully that an emetic would not act. The treatment was strong coffee freely, and keeping awake for seven hours, when sleep was allowed. Recovered.

Dr. Breed spoke of the use of belladonna in opium poisoning. Had seen four cases in which it was used, of which three recovered. He considered its beneficial effect unquestionable in all the cases. In the fatal case, seven or eight ounces of laudanum having been taken, life was preserved for thirteen hours, when the patient succumbed, perhaps partly in consequence of the severity of the means that had been used in keeping him awake.—*Trans. Lynn Med. Society.—Boston Med. and Surg. Journal*.

Dr. H. Walker details, in the *American Journal of Medical Sciences* for January 2, 1872, a case in which the young lady, aged fifteen, took between six and eight grains of opium in alcoholic solution. He found her profoundly comatose, with insensible conjunctiva, a slow, full pulse, and stertorous difficult respiration; and administered mustard, ipecac, and hot water with effect. He then gave a grain and a half of the alcoholic extract of belladonna hypodermically. The pupils shortly afterwards expanded, and copious emesis followed. The patient afterwards received strong coffee and stimulants, both hypodermically and by the mouth, and in two hours from the ingestion of the poison had sufficiently recovered to recognize and speak to her friends.

**Strychnine not Poisonous to Monkey.**—Strychnine, so fatal to most animals, may be eaten by certain species of monkeys with per

fect safety. In the case of an East India monkey, known as the Lungoor (*Presbytis entellus*), one grain was first concealed in a piece of cucumber, which was eaten by the animal with no apparent effect. Three grains were afterward given, and with the same result. To test the strychnine used, three grains were administered to a dog, which proved almost immediately fatal. Another Indian monkey, known as the pouch-cheek monkey, has been found to be more susceptible than the Lungoor, but not so much so as the dog.—*Boston Medical and Surgical Journal*.

**How the Bites of Snakes, Supposed to be Poisonous, may be Cured.**—In the *Indian Medical Gazette* of November 1 is a paper with the above caption by Dr. J. Ewart, in which he details cases in which the subjects were almost moribund, with thready, irregular pulse, and so utterly prostrated as not to be able to speak, although it was afterwards shown that either the snake was not a poisonous one or else there had been no bite at all. The symptoms were simply the result of intense fear and nervous shock. Dr. Ewart states that he has witnessed numerous experiments, and is convinced that after actual entrance of the poison of the cobra, and other really venomous Indian serpents, no known remedy is of any use, that the cases of reported cure have all been simple illusions.

**Ether as a Beverage.**—The *Chloralum Review* says that ether is very largely and increasingly used as an intoxicating drink in the north of Ireland.—*Medical Times and Gazette*.

**Ozone.**—H. H. Croft states (*Canada Pharmaceutical Journal*, January, 1872) that when iodic acid is crystallizing out of its solution, the air in the jar containing it becomes highly charged with ozone.

**Antidote for Carbolic Acid.**—Dr. T. Husemann recommends (*Neues Jahrbuch für Pharmacie*, September, 1871) a saturated solution of saccharate of lime as an antidote in carbolic acid poisoning.

**Poisonous Effects from Belladonna Applied Externally.**—In the *Revue Médicale de Toulouse* M. Giscaro records two cases in which persons had suffered from the poisonous effects of belladonna applied externally. In one case, where a small patch of belladonna, the size of a two-franc piece, had been applied to the temple for a neuralgic pain, the patient, eight hours afterwards, showed decided symptoms of atropia poisoning, which lasted two hours. In the other case, where an excessive quantity of ointment had been used for a uterine affection, similar symptoms came on in one hour, but quickly disappeared with the removal of the dressing.—*London Pharmaceutical Journal*.



## Part 4.

### PRESCRIPTIONS AND FORMULAS.

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#### HYPODERMIC USE OF ERGOT IN UTERINE DISEASE

DR. VON SWIDERS, Ky., strongly recommends subcutaneous injection of ergot, in uterine affections, especially chronic metritis and metrorrhagia. Severe bearing-down pains are said to be often produced, coming on in from half to one hour.

His formulæ are, where a rapid effect is desired: Aqueous extract of ergot 2.5 parts; rectified spirits and glycerine, each 7.5 parts; aqueous extract of ergot, 2 parts; rectified spirits, 5, glycerine, 10 parts. Where a slower and slighter action is desired, aqueous extract of ergot, rectified spirits, each 2.5 parts; glycerine, 12.5 parts; aqueous extract of ergot, 1 part; rectified spirits, 1.5; distilled water, 4.5; glycerine, 3 parts.—*Wiener Medizinische Wochenschrift*, January, 1871.

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#### ON THE BEST METHODS OF PREPARING COMPOUND SYRUP OF SQUILLS, SYRUP OF SENECA, AND SYRUP OF IPECACUANHA.

MR. WHARTON believes that the officinal method of preparing these syrups is imperfect, and so tedious as to tend to promote fermentation, and has found that by the use of magnesia or its carbonate the process can be very much facilitated. The formulæ for the various syrups mentioned are given by Mr. Wharton in full. The chief modification of the officinal consists in the rubbing up with the carbonate of magnesia the turbid liquid first obtained before filtering; in the compound squill syrup sixty grains of the magnesia, and in syrup of senega thirty grains to three pints of the preparation; in the syrup of ipecac forty-five grains to two pints.—*American Journal of Pharmacy*, March, 1871.

# CHLOROFORM AS A MEANS OF IMPROVING TASTE OF COD-LIVER OIL.

DR. HAGER states that the addition of 10 drops of chloroform to 100 grms. of cod-liver oil render that fluid perfectly agreeable and palatable to take, without in the least impairing its good qualities or interfering with its therapeutical value.—*Chemical News*, from *Neues Jahrbuch für Pharmacie*, January, 1871.

## SYRUP OF PHOSPHATE OF IRON, &c.

MICHAEL CARTEIGHE, in the *Pharmaceutical Transactions*, strongly recommends the following formulæ:—

### Syrup of the Phosphate of Iron, &c.

Take of Phosphate of iron.....	96 grs.
Water.....	9 fl. drms.
Syrupy phosphoric acid (Sp. gr. 1.5)...	7 fl. drms.
Syrup.....	10 fl. oz.

Rub the phosphate of iron with the water in a glass mortar, add the phosphoric acid, and filter the mixture into the syrup.

The phosphate of iron is made by Br. P. process, and should be fresh, only a few days old. Syrupy phosphoric acid sp. gr. 1.5 may be obtained of any manufacturing chemist, and according to Dr. Watts' table contains about 50 per cent.  $P_2O_5$ .

### Syrup of Phosphate of Iron and Lime.

Take of Phosphate of iron.....	96 grs.
Phosphate of lime.....	192 grs.
Water .....	8 fl. drms.
Syrupy phosphoric acid.....	8 fl. drms.
Syrup.....	10 fl. oz.

Mix the powders with the water in a glass mortar, add the acid, and filter into the syrup.

Each fluid drachm contains 1 grain iron, 2 gr. lime, and equivalent to 30 minims dilute phosphoric acid.

The phosphate of lime is made by precipitation from solutions of chloride of calcium and phosphate of soda, dried at 100° F., and used whilst fresh. That made from bone-ash is much less soluble.

**Syrup of Phosphates of Iron, Quinia, and Strychnia.***Easton's Syrup.*

Take of Phosphate of iron.....	192 grs.
Fresh quinia or its phosphate.....	96 gr.
Strychnia (in crystals).....	3 grs.
Water.....	7 fl. drms.
Syrupy phosphoric acid.....	9 fl. drms.
Syrup.....	10 fl. oz.

Rub the phosphate of iron with 5 fluid drachms of the water in a glass mortar; dissolve the strychnia and quinia in the acid, previously mixed with the remaining 2 drachms of water; mix and filter into the syrup. Each fluid drachm contains 2 gr. iron, 1 gr. quinine,  $\frac{1}{11}$  gr. strychnine.

SYRUP OF PHOSPHATES OF IRON AND STRYCHNINE may be prepared as last, omitting quinine.

**Syrup of Phosphate of Iron and Manganese.**

Take of Phosphate of iron.....	72 grs.
Phosphate of manganese.....	48 grs.
Water.....	8 fl. drms.
Syrupy phosphoric acid.....	8 fl. drms.
Syrup.....	10 fl. oz.

Rub the powders with the water, add the acid, and filter into syrup.

Each fluid drachm contains three-quarters grain iron salt, one-half grain manganese salt and acid equal to 30 minims of dilute phosphoric acid, B. P.

**Syrup of Phosphate of Quinia.**

Take of Phosphate of quinia.....	96 grs.
Water.....	13 $\frac{1}{4}$ fl. drms.
Syrupy phosphoric acid.....	2 $\frac{1}{4}$ fl. drms.
Syrup.....	10 fl. oz.

Mix acid and water, add quinia, and filter into syrup.

Each fluid drachm contains 1 gr. quinia and 10 minims dilute acid. If phosphate of quinia be not at hand, the same weight of alkaloid may be used, freshly made by precipitating solution of disulphate by solution of ammonia, washing and drying at 100° F.

### Syrup of Phosphate of Iron and Quinine.

Take of Phosphate of iron.....	192 grs.
Phosphate of quinia or quinia as in last.....	96 grs.
Water.....	7 fl. drms.
Syrupy phosphoric acid.....	9 fl. drms.
Syrup.....	10 fl. oz.

Sub the powders with water, add the acid, and filter into syrup.  
1 fluid drachm contains 2 gr. iron and 1 gr. quinine.

### Syrup of Phosphate of Manganese.

Take of Phosphate of manganese .....	96 grs.
Water.....	9 fl. drms.
Syrupy phosphoric acid.....	7 fl. drms.
Syrup.....	10 fl. oz.

Sub be made as last. Strength, 1 gr. manganese salt and 25 minims  
acid to fluid drachm.

### Syrup of Phosphate of Zinc.

Take of Phosphate of zinc .....	192 grs.
Water.....	11 fl. drms.
Syrupy phosphoric acid.....	5 fl. drms.
Syrup.....	10 fl. oz.

Sub the phosphate with the water, add the acid, and filter into syrup.  
1 fluid drachm contains 2 gr. zinc salt, 18 min. dilute phosphoric

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### Amber-Colored Syrup of Lactate of Iron.

Take of Lactate of iron.....	1 drms.
White sugar.....	12½ oz.
Boiling distilled water.....	6½ fl. 3.

Sub the salt to powder with half an ounce of the sugar, and dissolve  
mixture quickly in the boiling water. Pour the solution into a  
vessel placed on a sand-bath, and add to it the rest of the sugar in  
11 pieces. When the sugar is dissolved, filter the syrup, and as  
soon as cold, transfer it to well-stoppered vessels. Strength four grains  
per ounce. Dose—Two to four fluid drachms.—*Pharmaceutical*  
*Journal*.

### Lahache's Syrup of Iodide of Potassium and Iron.

Take of Iodide of potassium.....	308 grains.
Iodide of iron (in solution 1 to 3).....	203 "
Orange flower water.....	462 "
Simple syrup (concentrated).....	33½ fl. ounces.

Dissolve the iodide of potassium in the orange-flower water, add the other solution, and incorporate the syrup. Preserve it cool and free from light.—*Union Pharmaceutique*.

### Syrupus Croci.

In order to obviate the tendency to fermentation Mr. G. W. Kennedy proposes the following formula:

Take of True saffron.....	⅔ ss.
Glycerine.....	3 ij.
Water.....	⅔ vi.

Let the above macerate for seven days, filter into a pint bottle, and add water through the filter q. s. to make ⅔ viii., then add sugar 14 oz. av., and dissolve cold by frequent agitation. The result is a beautiful thick, dark, orange-colored syrup.—*American Journ. of Pharm.*

### Solution of Santonine.

It is often desirable to obtain a solution of santonine, especially for injection in parasitic disease of the bladder, etc. According to Dr. Jno. Harley, a concentrated limpid neutral solution may be obtained, which will bear dilution to any extent by the following method:

Take of Santonine in powder.....	gr. xii.
Bicarbonate of soda.....	grs. xx.
Distilled water.....	⅔ iij.

Put the soda and water in a flask. Keep the fluid near the boiling point, adding, as it disappears, about two grains of the santonine at a time, until the whole is dissolved.

By continued boiling the fluid may be reduced to two ounces, when it will contain six grains of the santonine to the ounce. If the alkaline reaction be objectionable, neutralize carefully with acetic acid. The solution is tasteless, except in regard to the acetate of soda.—*London Practitioner*.

### Martindale's Copaiba Jelly.

Take of Thick copaiba .....	℥ viii.
Powdered sugar.....	℥ iv.
Honey (not crystallized).....	℥ iv.
Distilled water .....	3 v.
Oil of peppermint.....	3 i.
Roseine (dissolved in ℥xx. water).....	℥ gr.

Put the honey, sugar, copaiba, and water into an evaporating dish. Keeping it well stirred, heat the mixture gently till it boils, and continue the agitation and ebullition about five minutes. In the first part of the operation two distinct strata are formed—the upper, the copaiba; the lower, the honey, etc. As the water evaporates it becomes a homogeneous jelly. When it has partly evaporated stir in the roseine (aniline pigment) and oil of peppermint. An ammoniacal solution of carmine may be substituted for the aniline color. According to Mr. Berkely Hill, this jelly, when well made, has the consistency of calf's-foot jelly, is very handsome, and not repulsive to the palate, the peppermint masking the copaiba. A piece the size of a filbert, rolled in wafer-paper, may be swallowed without tasting.

It contains fifty per cent. of copaiba.—*London Lancet*.

### Pills of Yellow Sandal Wood Oil.

℞ Take of Oil of yellow sandal wood.....	℥ ss.
Yellow wax.....	℥ ss.

Melt the wax in a capsule, and weigh into it the oil of sandal wood. Mix and stir until cold, then roll out the mass, and divide into 80 pills, and sprinkle with marsh mallow powder. Each pill contains three grains. In the same manner may be made pills of oils of cubebs, pepper, and fleabane.—PROF. EBERT, *The Chicago Pharmacist*.

### Sweet Tincture of Rhubarb.

Take of Rhubarb, bruised.....	2 ounces.
Liquorice root, bruised.....	2 “
Aniseed, bruised.....	1 “
Sugar.....	1 “
Diluted alcohol.....	2 pints.

Macerate for fourteen days, express and filter.—*New York Druggists' Circular*.

### Unguentum Acidi Carbolici.

Simple ointment, benzoated, 4 pounds troy.

Carbolic acid, crystallized, 3 ounces 96 grains.

Liquefy the acid by immersing the vessel containing it in hot water, and when the ointment is about congealing, add the acid, stirring it with a strong wooden spatula.

Each drachm contains three grains.—CHAS. FREDIGKE, *Chicago Pharmacy.*

### Soluble Pills of Quinine.

Tartaric acid.....grs. iv.

Sulphate of quinine.....grs. xx

Conserve of rose.....q. s.

To be made into 10 pills.—M. CAZAC, *Lyon Medical.*

### Spirit of Sandal Wood.

Take of Oil of sandal wood.....  $\frac{3}{4}$  i.

Alcohol.....  $\frac{3}{4}$  ii.

Oil of cinnamon..... ℥. xxv.

Mix.

Dose one to two drachms three times a day.—DR. HENDERSON, *London Lancet.*

### Poor Man's Plaster.

Take of Beeswax..... 1 ounce.

Tar..... 3 "

Resin..... 3 "

To be melted together and spread on paper or muslin.—*New York Druggists' Circular.*

### Suppositories for Piles.

R Butyr. theobromæ,  $\frac{3}{4}$  i.

Iodoformi, 3 i.

M. Ft. suppositor viij.

### Jackson's Cough Syrup.

(Formula of the Cincinnati College of Pharmacy.)

- ℞ Fluid extract of ipecac, 3 m.  
Fluid extract of senegæ (℥i Rad. senegæ to f℥i), ℥iii.  
Fluid extract rhei, ℥iv.  
Syr. simplex, ℥xxxi.  
Morphiæ muriat., grā viii.  
Ol. sassafras, gttm xxxii.  
M. ft. mistura.

By order of the College,

JAMES M. ATKINS, Secretary.

—Cincinnati Medical News.

### Cholera Infantum.

Dr. J. E. Reeves recommends (*Phila. Med. Times*) the following in the early stage of this affection:—

- ℞ Plumb. acet., gr. xij.  
Morph. acet., gr. m.  
Sacch. alb., ℥iss.  
Acet. destill., 3 ss.  
Aque, f℥ij.

M.

℞ A teaspoonful to a child from one to two years old. Should this fail to check vomiting, ten to fifteen drops of "chloroform paregoric" may be given. After vomiting has ceased—

- Bismuth subnitr., gr. xxxvi.  
Cretæ preparat., gr. xx.  
Pulv. Doveri, gr. v.

Make twelve powders.

℞ One every three or four hours until convalescence.

The Editor of NEW REMEDIES has found the following formula very efficient and elegant in allaying both the vomiting and purging. It is liked by most children. Owing to the often undue effect of opiates in infants, he prefers to give paregoric separately, as the symptoms seem to demand, omitting the opiate from the mixture.

- ℞ Acid. sulph. aromat., gr. xxiv.  
Extr. hæmatoyl., gr. xviii.  
Curaçoa, f℥i.  
Syrup, f℥xi.

M.

℞ Teaspoonful every one, or two, or three hours, according to urgency of case, to a child ten months old. With this, in severe cases, he orders that milk shall be used very sparingly, if at all, sustenance being obtained from raw "beef pulp." This is made by scraping, with a case-knife, a beefsteak—taking the red pulp, adding three to five gtt. of brandy to the teaspoonful, and giving the latter quantity every hour or two, followed by three grains of pepsin. After the severity of the disease is checked, bismuth is often very useful. Under any plan of treatment internally, the great value of external warmth—of sinapisms and spice-plasters, brandy as required, quiet, etc.—must be borne in mind.

### Spinal Irritation.

Dr. J. B. Corry (*Northwestern Medical and Surgical Journal*), in the treatment of spinal irritation, places more reliance in blistering the spine than in any other individual remedy. He finds the majority of cases to be benefited by the following:—

- ℞ Bromid. potass., ℥ss.  
Fl. ext. Valerian., ℥ij.  
Spts. ammonia aromat., ℥j.  
Syrup simplex, ℥j.

M.

℞ A teaspoonful three or four times a day.

### Chloral in Cod-Liver Oil.

The *Gaz. Farm. Ital.* advocates the use of the following formula, stating the compound to be less nauseous and more quieting than the pure oil:—

- ℞ Take of Chloral-hydrate, gr. 10.  
Cod-liver oil, gr. 190.

Digest in a sand-bath with gentle heat.



### Liniment for Fissure of the Anus.

M. Van Holsbeck states that he has succeeded in curing anal fissures which had resisted the division of the sphincter, with the following application. Dissolve one part of tannic acid in 16 parts of glycerine.

A tent wet with this preparation is to be introduced into the rectum night and morning. The bowels are to be kept open.—*Revue de Thérapeutique*, April 1, 1871.

### Formula for Iodoform Ointment.

Dr. Wm. Ingalls advocates the following formula for use in syphilitic ulcers and rupia:—

℞ Iodoform, 3 ss.  
Spts. vini rect., q. s.  
Adipis, 3 vijss.

M. et. ft. ung.

—*Boston Med. and Surg. Jour.*

### Canquoin's Paste.

Chloride of zinc.....8 parts.  
Oxide of zinc.....1 part.  
Flour (dried at 212°)...7 parts.  
Cold water.....1 part.

Mix the oxide of zinc and flour; dissolve the chloride of zinc in the water, add the zinc and flour, and rub up in a mortar. The paste in a few hours becomes consistent, and remains so. It should be kept in a glass-stoppered bottle, covered with a layer of starch.—*Gazette Médicale*.

### Parvesi's Collodion Styptic.

Collodion.....100 parts.  
Carbolic acid.....10 "  
Pure tannin.....5 "  
Benzoic acid.....5 "

Agitate till thoroughly mixed. On evaporation it leaves a brown pellicle, adhering strongly to tissues, and effecting instant coagulation of the blood and albumen.—*Year-Book of Pharmacy*.

### Crotonized Ether.

(DR. RUBIO.)

The following formula appears to afford a good method of administering Croton oil:—

℞ Ol. Tiglii, f ℥ i.  
Ether. sulph., f ℥ i.

M.

Dose, 5 to 25 drops, as required.—*Year-Book of Pharmacy*.

### Antistrumous Potion.

Iodine, 40 centigr.=6.17 gra.  
Iodide of potassium, 6 grammes=92.6 gra.  
Tincture of cardamom., 25 grammes=885.75 gra.  
Comp. syrup of sarsaparilla, 75 grammes=1,157.25 gra.

M.

Dose, two or three teaspoonfuls a day.—*L'Union Médicale*.

### Mercurial Potion.

Bichloride of mercury, 25 centigr.=3.86 gra.  
Tincture of gentian, 100 grammes=1,543.4 gra.  
Syrup of orange flowers, 50 grammes=771.7 gra.  
Dissolve.  
Two teaspoonfuls daily in secondary syphilis.—*L'Union Médicale*.

### Powders for Hemoptysis.

(OPPOLZEN'S.)

Powdered alum, 4 grammes=61.73 gra.  
Muriate of morphia, .05 centigr.=.0077 gra.  
White sugar, 4 grammes=61.73 gra.  
Make into 12 powders.

One to be taken every hour, and at the same time cold compresses to the chest, with absolute repose and silence. These powders are especially useful in cases which cannot support the perchloride of iron.—*L'Union Médicale*.

### Emminative Draught.

ate of potash, 4 grammes=  
gra.  
nd tinct. of cardamom., 8 grammes  
44 gra.  
nd tinct. of rhubarb, 8 grammes  
44 gra.  
c spirits of ammonia, 4 grammes  
2 gra.  
f Peppermint, 100 grammes=  
4 gra.  
f orange peel, 30 grammes.

ourth to be taken one hour before  
cipal meals, in cases of flatulent  
ia.—*L'Union Médicale*.

### Preparation of Starch Powder.

ine resublimed...gr. xxiv.  
vini rect. .... ℥ xxiv. vel q. s.  
v. amyli pur.... ℥ i.  
he iodine to powder by means of  
t; gradually add the starch, and  
until the mass assumes a uni-  
or.—*Pharm. Jour. and Trans.*

### Preparation of Symplic for Bronchocele.

essor James R. Wood, of New  
rtols the following formula as  
nent in bronchocele and other  
r tumors:—

ng. stramonii..... ℥ ij.  
rt. conii..... ℥ ij.  
did. potassii..... ℥ ij.  
didi..... gra. x.  
*t Review of Medicine and Pharm.*

### Preparation of Tonic Fluid Extract of Buchu.

. T. Bates recommends the fol-  
ormula highly:—

Buchu leaves..... 16 troy oz.  
Uva ursi..... 4 “ “  
Cubebs..... 4 “ “  
Juniper berries.... 4 “ “

with alcohol 95 per cent., and  
for a week; then exhaust with  
at 70°, and evaporate so as to

measure twenty-eight (28) fluid ounces.—  
*Materia Medica Journal*.

### Cephalic Essence.

(FOR HEADACHE).

Take Oil of lavender, 4 fl. drachms.  
Camphor, 2 ounces.  
Water of ammonia, strong, 2 ounces.  
Alcohol, 14 fl. ounces.

Fragrant, stimulant, and may be used  
as a rubefacient in local pains.—*Drug-  
gists' Circular*.

### Emulsion of Almonds.

The *Journal of Pharmacy* gives the  
following recipe for this useful prepara-  
tion:—

Take sweet almonds (blanched), sugar,  
and glycerine (C. P.), of each 1 ounce;  
powdered gum arabic, 1 drachm; water,  
2 ounces. Rub to a uniform paste, strain  
through muslin, and evaporate, by a heat  
not exceeding 150° F., to the consistence  
of a fresh solid extract; preserve in wide-  
mouthed bottles, of size convenient for  
use; may be flavored to suit taste. The  
author prefers orange-flower water and  
oil of almonds. When an emulsion of  
almonds is prescribed, as is now often the  
case, as a vehicle for chloral-hydrate, it is  
readily prepared as follows: Take con-  
centrated emulsion, 2 drachms; water,  
sufficient to make 1 ounce of mixture;  
mix thoroughly. The above emulsion is  
preserved, or rather condensed, milk of  
almonds, and may be useful for dietetic  
and culinary purposes—as, for instance,  
to prepare readily orgeade. The *syrop  
d'orgeade* does not, as is well known,  
keep for any length of time without fer-  
menting and spoiling.

### Glycerine Ointment.

R Starch..... 8 parts.  
Glycerine.....10 “

The starch, finely pulverized, is digest-  
ed for about an hour with the glycerine  
at the heat of a water-bath.

**Ointment for Hæmorrhoids.**

- ℞ Morphiæ sulph. .... grain iij.  
 Ext. stramonii. .... grain xxx.  
 Olei olivæ. .... grain lx.  
 Plumbi oxy-carb. .... grain lx.  
 Cerat. adipis. .... 3 iij.  
 M. Ft. unguent.—*Richmond Journal*.

**Glycerole of Lupulin.**

BY EMMET KANAL.

*(From the Author's Inaugural Essay.)*

- Take of Lupulin, one troy ounce.  
 Alcohol, six fluid ounces.  
 Glycerin, nine fluid ounces.  
 Curaçoa cordial, one fluid ounce.

Mix the alcohol with two fluid ounces of glycerine, moisten the lupulin with the mixture, pack into a cylindrical percolator, and continue to add this mixture until eight fluid ounces of the percolate has passed; to this add the remainder of glycerine, previously mixed with the curaçoa, and thoroughly mix the whole together. This will afford, by careful manipulation, a very fine preparation, miscible with any of the officinal syrups or tinctures, and possessing all the medicinal properties of lupulin. Dose for an adult, one teaspoonful, representing  $7\frac{1}{4}$  grains of lupulin.—*Amer. Jour. of Pharm.*

**Formula for Tinct. Cinchonæ Comp.**

- ℞ Red Peruvian bark,  $\frac{3}{4}$  iv.  
 Bitter orange-peel,  $\frac{3}{4}$  iij.  
 Serpentaria, grs. 360, moderately fine powder.  
 Saffron, "Spanish," grs. 120, moderately coarse powder.

Dilute alcohol, using 2 parts stronger alcohol to 1 of water, a sufficient quantity to obtain by percolation  $2\frac{1}{4}$  pints of tincture.

This does not deposit any sediment, and is a very dark and handsome tincture.

W. R. JONES.

**Soda Mint.**

- ℞ Sodæ bicarb. ....  $\frac{3}{4}$  i.  
 Spts. ammon. aromat. .... 3 i.  
 Aquæ menth. viridis. .... f  $\frac{3}{4}$  ij.  
 M. Filter.

Dose: One to two tablespoonfuls for an adult; one-half to two teaspoonfuls for an infant.

W. RANSTEAD JONES.

**Formulary of Elixirs and Other Preparations of the Newark Pharmaceutical Association.****Wine of Beef and Iron.**

- ℞ Extracti carnis (Liebig's) ... 1 oz.  
 Ferri citrat. .... 96 gra.  
 Vini xerici. .... 16 oz.  
 Syrupi. .... 2 oz.  
 Pimentæ (contus). ....  $\frac{1}{4}$  dr.  
 Aquæ. .... q. s. ft. 24 oz.

Dissolve the extract of beef in 4 oz. of water and add the allspice; after standing ten hours add the wine and syrup, then the citrate of iron, previously dissolved in 2 oz. water; filter.

Each fluid ounce contains: Fresh beef, 1 oz.; citrate of iron, 4 gra. Dose, one tablespoonful.

**Nutritive Wine.**

Prepared same as above, omitting the citrate of iron.

**Elixir of Calisaya.**

- ℞ Cort. cinchonæ flav. ....  $\frac{1}{4}$  oz.  
 " " (calisaya) ...  $\frac{1}{4}$  oz.  
 " aurantii. ....  $\frac{1}{4}$  oz.  
 Sem. coriand. .... 2 dra.  
 Cocci cacti. .... 1 dr.  
 Spts. vini deod. .... 12 oz.  
 Aquæ. .... 10 oz.  
 Glycerinæ. .... 5 oz.  
 Syrupi. .... 5 oz.

Reduce the barks, etc., to a moderately fine powder, and pack firmly in a percolator; mix the deodorized spirits, water, glycerine, and syrup, adding enough water to make two pints of percolate, to

which add 20 grains powdered tartaric acid, and, after standing 24 hours, filter.

Each fluid ounce contains 16 grains cinchona bark.

**Elixir of Pyrophos. Iron and Quinia.**

℞ Ferri pyrophos. .... 160 gra.  
Quiniæ sulph. .... 10 gra.  
Spts. vini deod. .... 2½ oz.  
Syrupi. .... 8 oz.  
Aque. .... 9½ oz.  
" flor. auranti. .... 5 oz.  
Acid. sulph. dil. .... q. s.

Dissolve the pyrophosph. of iron in the water and add the syrup, then dissolve the quinine in the orange-flower water, with as little diluted sulph. acid as possible, and gradually mix; then filter.

Each fluid ounce contains: Pyrophos. iron, 8 grains; sulph. quinia, ½ grain.

**Elixir of Quinia, Iron, and Bismuth.**

℞ Elix. ferri pyrophos. et quiniæ. 16 oz.  
Bismuth. et ammon. citratis. 128 gra.  
Dissolve.

Each fluid oz. contains 8 grains pyrophos. iron, 8 grains citrate bismuth, ½ grain quinia.

**Elixir of Pyrophos. Iron, Quinia, and Strychnia.**

℞ Elix. ferri pyrophos. et quiniæ. 16 oz.  
Strychniæ. .... 1 gr.  
Dissolve.

Each fluid ounce contains: Pyrophos. iron, 8 grains; quinia, ½ grain; strychnia, ⅙ grain.

**Wine of Pepsin.**

℞ Pepsin (Hawley's). .... 160 gra.  
Vini xerici. .... 16 oz.  
Acid. mur. dil. .... 1 dr.

Triturate the pepsin with 4 oz. of wine mixed with acid. Pour this on a filter, and pass the balance of the wine through it.

Each fluid ounce contains: Hawley's pepsin, 10 grains.

**Elixir Aromatic.**

℞ Cort. aurantii. .... 4 dra.  
Sem. coriand. .... 2 dra.  
" angelicæ. .... 2½ dra.  
Cocci cacti. .... 1 dr.  
Spts. vini deod. .... 12 oz.  
Aque. .... 10 oz.  
Glycerinæ. .... 5 oz.  
Syrupi. .... 6 oz.  
Percolate 2 pints.

A pleasant vehicle for administering nauseous remedies.

**Elixir of Valer. Ammonia.**

℞ Ammoniæ valerianat. .... 96 gra.  
Fl. ext. vanil.,  
Tr. cardam. comp., ss. .... ½ oz.  
" xanthoxyl. .... 2 dra.  
Syr. aurantii cort. .... 6 dra.  
Aque. .... 4 oz.

Dissolve the valerianate of ammonia in the water and add the other ingredients, previously mixed.

Two grains val. ammonia to each drachm.

**Comp. Syrup of Hypophosphites and Iron.**

℞ Hypophos. sodæ,  
" calcis,  
" potassæ, ss. .... 256 gra.  
" ferri. .... 126 gra.  
Aque. .... 12 oz.  
Sacch. alb. .... 18 oz.

Dissolve the hypophosphites in the water in a water-bath and filter. Add sufficient water to make up for the evaporation. Add sugar and apply gentle heat to make syrup, 21 oz.

Each fluid ounce contains: Hypophosphite of soda, lime, and potass., 12 gra. each; hypophos. of iron, 6 gra.

**Comp. Syrup of Hypophosphites.**

Same as above, omitting the iron.

**Chemical Food.**

Parrish's formula, omitting cochineal and muriatic acid. See U. S. D.

Each teaspoonful contains: 1 grain phosphate of iron;  $2\frac{1}{2}$  grains of lime, and the other alkaline phosphates.

**Elixir of Pepsin, Bismuth, and Strychnia.**

R. Pepsin (Hawley's).....	256 gra.
Bismuth. citrat.....	64 gra.
Strychniæ.....	1 gr.
Aq. flor. aurantii.....	6 oz.
Spirit. vini deod.....	2 oz.
Aquæ.....	4 oz.
Glycerinæ (pure).....	2 oz.
Syrupi.....	2 oz.

Triturate the pepsin with the water and glycerine, and filter; dissolve the bismuth in 2 oz. orange-flower water, with a few drops of aqua ammoniæ. Dissolve the strychnia with a few drops of acetic acid. Add the bismuth solution to the pepsin, then the balance of the fluids, and finally the solution of strychnia.

Each fluid ounce contains: Pepsin, 16 grains; citrate bismuth, 4 grains; strychnia,  $\frac{1}{8}$  grain.

**Elixir of Gentian and Ferri Phosp.**

R. Cort. aurantii.....	1 oz.
Sem. coriand.....	1 dr.
Macidis.....	1 dr.
Rad. gentian.....	1 oz.
Spts. vini deod.....	4 oz.
Aquæ.....	4 oz.
“ flor. aurantii.....	2 oz.
Syrupi.....	6 oz.
Ferri pyrophos.....	256 gra.

Reduce the roots, seeds, etc., to a moderately fine powder, pack in a percolator, mix the spirits and waters, and percolate 10 ounces. Dissolve the pyrophosphate of iron; add the syrup and filter.

Each fluid ounce represents 16 grains pyrophos. of iron; 30 grains gentian.—*Journal of Pharmacy.*

**Powder of Tar.**

Mr. MAGNE LALIENS, pharmacien of Toulouse, proposes that one part of tar shall be rubbed up with two parts of charcoal of light wood, and in this way a powder be prepared which is readily handled, and does not stick to the vessels and hands. Out of this preparation the various liquid preparations are readily made.

Thus, *tar-water*—a litre (1.056 qts.) of water should be macerated with, and filtered through 15 to 30 grammes (oz. ss. to oz. i.) of the powder.

*Syrup of Tar*—R. Tar powder, 50 grammes ( $\frac{3}{4}$  i. 3 ivss.)

Water, 189 gramm. ( $\frac{3}{4}$  v. 3 vj.)

Sugar, 320 gramm. ( $\frac{3}{4}$  x. 3 ij.)

Mix the sugar and powder, pour on the water, and allow to digest at 60° C.

For purposes of fumigation the tar powder is very convenient, and appears to be the best preparation yet brought forward for inhalation, as it may be simply put in a pipe on a tampon of cotton, and smoked. Internally the powder may be exhibited in substance; it may be locally applied to foul sores, etc.

If desired, a similar preparation can be made from coal tar.—*L'Union Médicale de la Gironde*, May, 1871.

**Formula for Chlorosis.**

BY DR. DELIOUX DE SAVIGNAC.

Take of Tartrate of iron and potash, 10 grammes (154.34 gr.).

Powdered aloes, 2 grammes (30.86 grs.).

Powdered castoreum, 2 grammes (30.86 grs.).

Powdered saffron, 1 gramme (15.34 grs.).

Venice turpentine, q. s

Make into 100 pills. The quantity of Venice turpentine required to make into a pilular consistence is about five grammes (77 grs.). One of these pills is

to be taken three times a day, and the number increased until they act as a laxative on the bowels.—*Bull. Gén. de Thérap.*, June 30, 1871.

### Anthelmintic Prescriptions.

M. BOUCHUT commends most highly the following recipes:—

#### For Lumbricoid Worms.

R Calomel, q. a.

Santonine, q. a.

The powders are to be so made that for every year of age, 5 to 10 centigrammes of calomel and 5 grains of santonine will be taken.

#### For Ascarides.

Take of Soot..... 30 parts.

Water..... 300 “

Boil and administer as an injection at temperature of about 100° F.

M. Bouchut has also used with great success, in cases of lumbricoid worms in children, the following syrup, whose formula was given him by M. Cruveilhier:—

Take of Senna,  
Rhubarb,  
Santonica,  
Tansy,  
Corsican moss (Irish moss),  
Wormwood,

Each 4 grammes (61.7 gra.).

Make a cold infusion with 240 grammes (3 viij. 3 v. avoird.), of water, and add enough sugar to make a syrup.

Dose—A tablespoonful in the morning, for three days.—*Journal de Médecine et de Chirurgie pratiques*, p. 62, 1871.

### Carbolic Acid Formulæ.

THE following formulæ are taken from Dr. A. S. Sanson's work, entitled “The Antiseptic System:”

#### Alcoholized Carbolic Acid.

Take of Alcohol,

Acid carbol. (crystallized),  
equal parts.

Mix and keep in well-stoppered bottles.—*Lemaire*.

#### Etherized Carbolic Acid.

Take of Ether..... 100 parts.

Carbolic acid.... 1 part.

M.

Used for insufflation in catarrh of the Eustachian tube.—*Lemaire*.

#### Carbolized Vinegar.

Take of Vinegar..... 4 parts.

Carbolized acid.... 1 part.

M. Used as a disinfectant instead of aromatic vinegar.—*Quesneville*.

#### Glycerinum Acidi Carbolici.

Take of Glycerine..... f. 3 iv.

Carbolic acid..... 3 i.

Rub in mortar till solution is effected.

—*British Pharmacopæia*.

#### Carbolized Glycerine.

Take of Glycerine..... 100 parts.

Carbolic acid.... 1 part.

Mix. For impetigo, chronic eczema, lichen, prurigo, and pemphigus.—*Lemaire*.

#### Syrup of Carbolic Acid.

Take of Simple syrup..... 100 parts.

Carbolic acid..... 1 part.

Mix. —*Chaumelle*.

#### Compound Disinfectant Solution.

Take of Water..... 1000 parts,

Carbolic acid..... 10 “

Sulphate of zinc or iron 8 “

Mix. The carbolic acid having no action on sulphuretted hydrogen, the salt is inserted to act on it.—*Lemaire*.

#### The Stivern Disinfectant.

Good quick-lime put in a cask, slaked and stirred; coal tar, 10 lbs.; mix thoroughly, then add chloride of magnesium 15 lbs. dissolved in hot water. Mix again and add hot water, until the mass is liquid enough to drop slowly from a stick plunged into it and then withdrawn. The magnesium chloride is decomposed, deliquescent chloride of lime and magnesia resulting; this prevents caking and adherence to pipes.—*Parkes*.

**Solution of Carbolic Acid for Toilets.**

Take of—

Crystallized carbolic acid. .... 10 parts.  
 Essence of millefleurs. .... 1 part.  
 Tincture of soap-bark (quilla-  
 ya saponaria)..... 50 parts.  
 Water.....1000 "

Mix. To be diluted with ten times its bulk of water, for washing hands, etc. The soap-bark tincture is prepared by boiling one part of the powdered bark in 4 of alcohol and filtering.—*Lemaire*.

**Carbolized Tooth-Wash.**

Take of Water.....1000 parts.  
 Essence of spearmint 50 "  
 Carbolic acid..... 10 "

Mix. A dessert-spoonful to a quarter tumbler of water.—*Lemaire*.

**Carbolized Amylaceous Ointment.**

Take of Pure starch..... 3 parts.  
 Hot water.....10 "

Mix in the usual way (the starch being first made into a paste with cold water, and then hot water added) to a stiff consistence; then add olive oil, 1 part, glycerine, 3 parts, carbolic acid, 1 part, and thoroughly mix in a mortar. A very pleasant, soft jelly, much better than the purely fatty ointments.—*Sansom*.

**Carbolized Oil.**

Take of Crystallized carbolic acid, 1 part.  
 Boiled linseed or olive oil, 4 parts.  
 Mix.

**Carbolized Putty.**

Take of Carbolized oil about 6 table-spoonfuls.  
 Common whiting sufficient to make a firm paste.

Mix. —*Lister*.

**Antiseptic Lead Plaster.**

Olive oil, 12 parts (by measure); litharge, finely ground, 12 parts (by weight); beeswax, 3 parts (by weight); crystallized carbolic acid, 2½ parts (by weight); heat half the olive

oil over a slow fire, then add the litharge gradually, stirring constantly till the mass becomes thick or a little stiff; then add the other half of the oil, till it becomes again thin. Then add the wax gradually till the liquid again thickens. Remove from the fire and add the acid, stirring throughout. Cover up closely and set aside, to allow all the residual litharge to settle; then pour off the fluid, and spread upon calico to the proper thickness. The plaster made in this way can be spread by machine, and kept rolled in stock, and if in a well-fitting tin canister will retain its virtues for a great length of time.—*Lister*.

**Antiseptic Lac Plaster.**

Shellac, 3 parts; crystallized carbolic acid, 1 part. Heat the lac with about one-third of the carbolic acid, over a slow fire, till the lac is completely melted; then remove from the fire and add the remainder of the acid, and stir briskly till the ingredients are thoroughly mixed. Strain through muslin, and pour into the machine for spreading plaster; and when the liquid has thickened by cooling to a degree ascertained by experience, spread to the thickness of about ⅛ of an inch. Afterwards, brush over the surface of the plaster lightly with a solution of gutta-percha in bisulphide of carbon. When the sulphide has evaporated, put in tin canisters.—*Lister*.

**Antiseptic Cere-Cloth.**

Calico or thin cloth may be saturated with the cerate made by the following receipt, by simply drawing it through the melted ointment.

*Strongest Cerate* :—

Take of Pure acid (liquefied), f ʒ iij.  
 Olive oil (colored with alkali root to distinguish cerate)  
 f ʒ jss.  
 Yellow wax (liquefied), f ʒ iij.  
 Paraffine (liquefied), f ʒ v.

Mix with heat.

**Medium strength:—**

Take of Pure carbolic acid, f ʒ ij.  
Olive oil, f ʒ ijss.  
Yellow wax, f ʒ ijss.  
Paraffine, f ʒ v.

Mix with heat.

**Weakest:—**

Take of Pure carbolic acid, f ʒ iss.  
Olive oil, f ʒ i., f ʒ vi.  
White wax, f ʒ i., f ʒ vi.  
Paraffine, f ʒ vij.

Mix with heat.—*Lund.*

**Antiseptic Muslin Gauze.**

Take of Paraffine.....16 parts.  
Resin..... 4 parts.  
Carbolic acid..... 1 part.

Melt together.

Cheap muslin gauze is dipped in the mixture and well wrung or pressed while hot. A good antiseptic covering for wounds, nearly free from odor and unirritating to the most sensitive skin. By washing in boiling water it loses the paraffine and resin, and the same gauze may therefore be used repeatedly. When used, should be folded in about 8 layers.—*Lister.*

**Protective against Local Irritating Effects of the Acid.**

Varnish both sides of oiled silk with copal varnish, and when dry brush over with a mixture of starch and dextrine to give a film of material soluble in water, so that it may become uniformly moistened when dipped in antiseptic lotion.—*Lister.*

**Carbolized Powders.**

Take of pure liquefied carbolic acid and alcohol, each 5 parts. Mix. Add by degrees 100 parts of one of the following powders: lycopodium, starch, charcoal, or plaster-of-Paris.—*Lister.*

**Antiseptic Catgut Ligature.**

Made by steeping catgut of the required thickness in carbolized oil (1-5), with a very small quantity of water dif-

fused through it. The small proportion of water present renders the catgut supple, and so changes it that it may be transferred to a watery solution at the commencement of an operation and remain unchanged.—*Lister.*

**Aceto-Carbolic Solution for Tinea and Scabies.**

Take of Pyroligneous acetic acid, 8°..... 20 parts.  
Water..... 75 parts.  
Pure carbolic acid. 5 parts.

Mix the acids and add the water.

For tinea apply the liquid once a day with a brush; for scabies sponge with it, and also apply to the clothes.—*Le-maire.*

**Carbolized Gargle for Diphtheria. .**

Take of Carbolic acid, 20 minims.  
Acetic acid, 3 ss.  
Honey,  
Tincture of myrrh, each, f ʒ ij.  
Water, to f ʒ vi.

The acids to be shaken together well before the other ingredients are added.—*Charles Sedgwick, Jr.*

**Quinine and Sulpho-Carbolate of Sodium.**

Take of Sulphate of quinine, f—i.  
Sulphuric acid, 5 minims.

Dissolve, and add to solution of sulpho-carbolate of sodium 20 grs., in water one fluid ounce.—*Sansom.*

**Carbolized Mixture for Zymotic Diseases.**

Take of carbolic and acetic acids, each, from 1 to 1½ f. drachms.  
Tincture of opium, chloric ether, each 1 fl. drachm.  
Water, to 8 fl. ounces.

A tablespoonful every 4 hours until the fever subsides.—*Dr. Alex. Keith.*



### Plaster of Cantharidine.

In order to avoid the inequality of strength in blistering ointment and its deterioration by age, Delpsch and Guichard (*Gaz. de Phar.*) recommend the use of a salt of cantharidine. To prepare, this they first dissolve with moderate warmth 2 grmm. of cantharidine in 100 grmm. of alcohol, and add 1.5 grmm. of caustic potash dissolved in as small a quantity of water as may be; union takes place immediately, and the salt may be separated by filtration. The plaster is prepared from the salt in the following way: Two grmm. of gelatine are dissolved in 10 of water; to this are added 10 grmm. of alcohol, a little glycerine, and 0.20 grmm. of the cantharidal salt. With this mixture gutta-percha paper is spread in such a way that each square decimtr. is covered by 1 ctm. of the salt. When the plaster is to be used its surface should be moistened. If for any reason it is desirable to make it more active, it may be done by putting on more of the cantharidal mixture.—*Schmidt's Jahrbücher*, June 19, 1871.

### Tincture of Acetate of Iron.

R Liq. ferri persulph. . . . f ʒ ijss.

Liq. ammoniac. . . . . q. s.

M.

The precipitated oxide of iron, after being well washed and pressed as dry as possible, is to be dissolved without heat in 520 grains, or approximately, 9 fluid drachms of glacial acetic acid, and the solution diluted with distilled water to 5 fluid ounces. One part of this with 3 parts of sp. vini. rect. will represent the tinct. ferri acet. B. P. The preparation keeps well, but, being slightly supersaturated, deposits some crystals, which immediately dissolve on addition of water or dilute alcohol.—*Year-Book of Pharmacy*.

### Excipients for Pills.

W. Martindale, in an elaborate paper upon this subject, states he has, after repeated experiments, settled down upon

two excipients. One he calls *glycerine mass*, the other *bread mass*. The first is made by heating together, with constant stirring until a temperature of 240° F. is reached, five parts of glycerine by weight with one part of flour; this makes a firm adhesive paste. The second, *bread mass*, is firmer, and is made in a similar way, glycerine and flour being used in equal proportion. For particular purposes it sometimes is well to vary from these proportions to get excipients of different density.—*Transactions British Pharmaceutical Conference*.

### Collodion prepared with Paper.

M. Guichard states that if cotton be substituted by paper in the preparation of collodion, a more uniform, transparent, and finer article results. A fine filtering-paper which has been well washed with water acidulated with muriatic.—*Bulletin Général de Thérapeutique*.

### Iodized Cotton.

Dr. Mehu proposes iodized cotton as a local application, to be applied over glandular enlargements, and kept in place by appropriate bandages. The cotton is of a deep brown color, and when exposed to the air slowly loses its iodine, and becomes white. In making it 10 parts of iodine should be used for every 100 of cotton. The latter should be very clean and fine, and should be pulled into little pieces or flakes, which are to be dropped separately into a wide-mouthed bottle, each flake having in its turn its appropriate measure of iodine thrown on it. When the bottle is in this way partially filled, it should be loosely corked, and gradually heated in a sand-bath, until the volatilized iodine is thoroughly diffused through the cotton. Dr. Mehu has obtained very good results from this cotton in the treatment of scrofulous enlargement of the glands in children. It does not discolor or irritate the skin.—*Bulletin Général de Thérap.*, July 15, 1871.

**Treatment of Chorea.**

M. Favre d'Eschans says, in the *London Lancet*, that he has attained the happiest effects in epilepsy and chorea, from the use of prussiate of iron. The following is his formulary:—

Prussiate of iron . . . grs. xv.

Extract of valerian . . grs. xxxv.

Make 24 pills, and give one pill every six hours, each pill to be followed by a wine-glass of infusion of valerian.—*Oregon Med. and Surg. Reporter*.

**Formula for Otitis.**

Take of Tobacco . . . 3 j. (cut fine).

Glycerine . . . 3 j. M.

S.—five drops in the ear once a day.

Dr. Brownrigg of Mississippi commends most highly the above formula as a remedy in acute otitis.—*Medical and Surgical Reporter*, Dec. 9, 1871.

**Chinoidine.**

Dr. I. T. Davis, Jr., recommends this substance as a substitute for quinine in malaria, chiefly on account of its cheapness (price 15 cts. an ounce), to be used in pill form and as an elixir. The pills are made directly from the mass, 2 grs. each.

“Of these, I direct 12 to be taken on the well-day—one every hour, two every two hours, or three every two hours, according to circumstances; twenty-four grains being sufficient to break up the paroxysm in the adult. I then direct the patient to take a pill three times a day for a week, and in protracted cases for two or three weeks.”

The elixir is made as follows:

R Chinoidine,

Acetic acid . . . aa, 3 j.

Aquæ . . . . . 3 ix.

Digest in a half-gallon bottle for twenty-four hours, with frequent agitation until all the chinoidine is dissolved. Add elixir-taraxacum, 3 x., filter, and add syrup orange peel, 3 x., when it is ready for use.

A teaspoonful contains two grains, and may be used for a pill and in the same manner.—*Medical and Surgical Reporter*, Dec. 9, 1871.

**Maltine.**

This substance, called *diastase*, first reported by Payen and Persoz in 1833, is recommended in dyspepsia, either with or without pepsine, by Prof. De Renzi. The subjoined formula is laid down in *La Nuova Liguria Medica*:—

R Maltine, centigr. xv. F. pil. No. 8.

One pill before each meal.

R Maltine, centigr. v. to x.; Pepsine, centigr., c. to cl. F. doses No. 2.

—*New York Medical Record*.

**Diaphoretic.**

Dr. S. C. Osborne commends very highly the following formula, stating that in intermittent fever it is of great use, not only in shortening the paroxysm but also in lessening the dose of quinine necessary to prevent relapse. The first dose usually nauseates for the hour, but after this nausea is absent, and the third dose rarely fails to induce profuse diaphoresis.

Take of

Chloroformi

Sq. etheris nitrosi

Tinct. opii camphor

Vini antimonii

Aquæ . . . . . fl 3 vi.

aa fl 3 ss.

Mix.

S. For adults teaspoonful every hour until the fever abates.—*American Practitioner*, vol. iv., p. 187.

**Dupuytren's Pills for Syphilis.**

Take of Extract of guaiac 0.80 grms. (12.26 gr.)

Extract of opium 0.40 grms. (6.13 gr.).

Corrosive sublimate 0.20 grms. (3.07 gr.).

Make into 20 pills, each of which will contain 0.02 gramm. extract of opium and 0.01 of corrosive sublimate. These pills are very renowned in France.—*Ibid*.

**Dr. Debout's Pills for Migraine.**

These pills are exceedingly commended as having power to cure in many cases this obstinate affection.

Take of Quinia sulph. 3 grms. (46 gr.).  
Digitalis (powdered), 1 grm. 50 (23 gr.).  
Syrup q. s.

Mix, and divide into thirty pills. One to be taken every night at bed-time.—*L'Union Pharmaceutique*, Sept., 1871.

### Paste of Canquoin, Modified.

(DEMARQUAY.)

Chloride of zinc.....10 parts.  
Glycerine..... 4 "  
Starch.....20 "

Mix. This paste is more convenient in application than the original.—*L'Union Médicale*.

### Ioduretted Gargle for Syphilitic Ulceration of the Mouth.

Take of Iodide of potassium. 0.60 parts.  
Tincture of iodine... 2.00 "  
Distilled water....140.00 "

M—Dr. Gauthier, *Giornale italiano delle malattie veneree e delle malattie della pelle*, Nov., 1870.

### Antihemorrhoidal Suppository.

Extract of rhatany. 50 centigr. (7.67 gr.).  
Chlorohydrate of morphia.. 2 centigr. (.31 gr.).

Stearine (better, cocoa butter.—Ed. N. R.), 1 gramme.

Make into a suppository.—*Revue de Thérap. Médico-Chirurg.*, Aug., 1871.

### Glycerine to Mask Castor-Oil.

According to a correspondent of the *Boston Medical and Surgical Journal*, the following formula affords a method of completely disguising castor-oil:—

Glycerine,  
Ol. ricini, āā..... f ʒ ij.  
Ol. cinnam..... ℥ iv.

The essential oil should be rubbed up with the glycerine, the castor-oil added, and the mixture well shaken before using. [This seems to be the best method of disguising castor-oil yet devised.—Ed. N. R.]

### Lavender Brandy.

Take of Oil of lavender..... 2 ounces.  
Oil of neroli..... 10 drops.  
Essence of lavender. 1 pound.  
Syrup of gum arabic 1 gallon.  
Pure spirits..... 4 barrels.

Dissolve the oils first in a sufficient quantity of alcohol, say about one gallon; add then the essence, mix the whole with the spirits, and add, finally, the syrup. A different proceeding will make the liquid turbid, so that it has to be filtered.—*Druggists' Circular*.

### Dyspepsia Lozenges.

Take of subnitrate of bismuth, 9 grammes= ʒ ij. grs. 18.  
Carbonate of magnesia, 14 grammes= 3 iijss.

Precipitated carbonate of lime, 20 grammes= ʒ v.

Pulverized sugar, 100 grammes= ʒ i. 3 iss.

Pulverized gum arabic, 4 grammes= ʒ i. Mucilage of quince, q. s.

Make into 100 tablets.

S.—Two or three after meals in acid dyspepsia.—*Revue de Thérap. Médico-Chirurg.*, Sept., 1871.

### Antineuralgic Powders.

LANGLEBERT.

Take of powdered cubebs, 68 grammes= ʒ ij. 3 iss.

Carbonate of soda, 4 grammes= ʒ i.

Mix, and divide into 36 powders. Six to twelve daily for the neuralgic urethral pains which persist after the drying of a blennorrhagic discharge. In addition, use three injections of one or two minutes' duration of the following solution:—

Take distilled water.....100 parts  
Atropia sulph.....10 to 20 "

Mix.

—*Revue de Thérap. Médico-Chirurg.*

### Antidysmenorrhœa' Pills.

Take of Extract of belladonna, 45 centigrammes= 6.8 grs.

Camphor (powdered), 4 grammes=61.3  
grs.

Sulphate of quinia, 2 grammes=30.7 grs.

Mix and make into 30 pills.

8. One every hour, or two hours, until relief is afforded; these pills are useful when the dysmenorrhœa is not organic in its nature.—*Revue de Thérap. Medico-Chir.*, Sept., 1871.

### A Remedy for Freckles.

Take of Sulpho-carbolate of zinc. 2 parts.

Glycerine.....25 "

Rose-water.....25 "

Spirits.....5 "

Dissolve and mix.

The freckled skin is to be anointed with this twice daily, the ointment being allowed to stay on for one-half to one hour, and then washed off with cold water. Anæmic persons should also take a mild ferruginous tonic. In the sunlight a dark veil should be worn.—*Zeitschrift des Allegem. Oester. Apothek. Vereines*, October 1, 1871.

### Drops for Gastralgia (Dr. Gallard's Formula).

Take of Distilled water of

cherry laurel.... 5 00 parts.

Muriate of morphia 0.10 "

Mix and dissolve.

One drop on a lump of sugar immediately before meals.—*Union Médicale*.

### Antigastralgie Pills.

Take of extract of belladonna, 30 centigs.  
=4.6 grs.

Sulphate of quinine, 2 grammes=30.7 grs.

Extract of valerian, q. s.

Mix and make into 15 pills.

8. Three a day.

—*Revue de Thérap. Med.*

### Glycerole of Tar.

Take of Tar.....150 parts.

Yellow of egg...150 "

Glycerine.....300 "

Mix. This preparation is of the con-

sistency of a pomade. It does not adhere to the skin. It may be diluted with water.—*Union Médicale*.

### Carminative Powder for Infants.

Take of Fennel seed..... 25.0 grains.

Aniseed ..... 50.0 "

Powdered sugar....350.0 "

Powdered opium... 1.0 "

Make into a powder, ten grains of which will contain .02 grains of opium.—*Zeitschrift des Oesterreich. Apothek. Vereines*, Sept., 1871.

### Elixir of Chloroform (Useful in Colic).

Take of Chloroform..... }

Tinct. opii..... } ss f 3 iss.

Tinct. camphoris... }

Spir. ammon. arom.. }

Oil cinnamon.....gtt xx.

Brandy .....f 3 ij.

Mix. Sig. Half a fluid drachm, more or less.—*American Eclectic Medical Journal*.

### Astringent Aromatic Powder.

Take of Catechu.....8 parts.

Kino.....4 "

Extract of rhatany..4 "

Canella.....2 "

Nutmeg.....2 "

Mix and powder. To be given in doses of 1 to 3 (15 to 46 gr.) grammes for chronic diarrhœa.—*Union Médicale*.

### Disinfectant Glycerole for Suppurating Wounds.

Take of Glycerine.....80 parts.

Sulphite of soda..10 "

Powdered starch.. 8 "

Mix and heat in a water-bath until it acquires the right consistency.—*Union Médicale*.

### Pills of Iodoform.

Take of iodoform 10 grammes (153.4 grs.).

Extr. gentian q. s.

Make into 100 pills, each containing 10

ctgrm. (1.53 gr.) of iodoform. Take 1 to 4 daily.—*Ibid.*

### Wutzer's Pills for Sperma- torrhœa.

Take of Phosphoric acid....4 parts.  
Camphor.....1.2 "  
Powdered red cin-  
chona bark.....4 "  
Extr. cascarrilla.....q.s.

Take daily 5 pills of 0.1 gramme (1.534 grains) weight of this mixture.—  
*Zeits. des Oester. Apothek. Vereines.*

### Berndt's Pills for Diabetes.

Take of Acetate of morphia 0.15 grms. (2.25 grs.).

Ammoniated copper 0.30 grammes (4.5 grs.).

Extract of quassia,

Extract of beef's gall, *aa* 4.00 grammes (61.36 grs.).

Make into pills of 0.1 gramme weight and give morning and evening five.—  
*Ibid.*, Aug. 20, 1871.

### Anæsthetic Calcareous Gly- cerole.

(DR. BRUYNE.)

Take of freshly precipitated hydrate of lime..... 3 parts.

Glycerine.....150 "

Heat slightly and mix.

Then add bichloride of ethyl.3 "

The liquid thus obtained is transparent, uniform, clear. It may be applied by means of a compress, which is to be covered by some impervious material. It is especially useful in burns and their ulcers, in foul gangrenous or indolent ulcers, the formula being modified to suit the various cases by diminution of the lime or anæsthetic as the indications may require. It is also especially useful in scaly and dry cutaneous eruptions, especially where there is much itching.—  
*Journal de Bruxelles.*

### Glycerole of Thymic Acid.

Take of Thymic acid..... 1 part.

Glycerole of starch.100 parts.

A very elegant disinfectant solution for application to foul ulcers.

### Lotion of Thymic Acid.

Take of Thymic acid..... 1 part.

Alcohol, at 85°.... 4 parts.

Dissolve, and add distilled water.....995 "

Use for injections, washes, etc.

### Pomade of Thymic Acid.

Take of Thymic acid....1 to 4 parts.

Lard.....100 parts.

Mix, and use as an ointment.

These preparations of thymol are to be used instead of similar preparations of carbolic acid. They are exceedingly elegant, thymol having a very agreeable odor, but costly. All these formulas are taken from *Jeannel's Formulaire Offic. et Mag.*

### Collodium-Paper — Counter- Irritating Collodium.

A very viscid and perfect collodium-paper may be prepared by the following formula:—

Take of Sulphuric acid (1.82) 200 parts.

Nitric " (1.37) 100 "

White filtering-paper, previously purified by hydrochloric acid..... 10 "

Mix in a glass vessel, and allow to stand about three hours till the reaction is complete. Then wash well. The paper thus obtained is freely soluble in a mixture of alcohol and ether, or if a little residue is left after solution it remains at the bottom; a very useful collodium for counter-irritation may be prepared according to the following formula:—

No. 1. A very energetic preparation:—

Alcohol..... 3.50 parts.

Ether..... 11.50 "

Paper powder.... 1.00 part.

Mix, and add 10 parts of resin of thapsia, dissolved in 16 parts of alcohol.

No. 2. A weaker preparation—one more generally useful:—

Take of Alcohol..... 12.00 parts.  
Ether..... 45 “  
Paper powder... 5 “

Dissolve, and add:—

Resin of thapsia, 30 parts, dissolved in 63 parts of Alcohol.—*L'Union Pharmaceutique*, October, 1871.

### Antacid Mixture (Piorry).

Take of Bicarbonate of soda, 6 grammes (3 iss).  
Distilled water, 30 grammes (3 vii).  
Syrup of orange flowers, 30 grammes (3 vii).  
Essential oil of anise, 1 gtt.

To be taken at one time.—*L'Union Médicale*.

### Antidysenteric Injection.

Iodine, 60 centigs.=9.1 gr.  
Iodide of potassium, 1 gramme=15.84 gr.  
Distilled water, 60 grammes=920 gr.

Dissolve, and use as an injection against dysentery. It is sometimes necessary to give it twice in the twenty-four hours, and to continue for two or three days. For children it should be used less strong. A marked effect of the injection is to lessen the tenesmus at once.—*L'Union Médicale*, Oct., 1871.

### Eulenberg's Formula for the Vomiting of Pregnancy.

Tincture of iodine..... 1 part.  
Rectified alcohol..... 12 “

Mix. Three drops to be given many times a day.—*L'Union Médicale*.

### Ointment of Balsam of Peru.

Take of Red oxide of mercury, 10 centigr.=1.534 gr.  
Lard, 4 grammes. 3 i.  
Balsam of Peru, 8 to 12 drops.

This ointment is most strenuously

commended by Dr. Warlomont in the treatment of atonic corneal ulcers, especially when they are large and deep. Also in perforating ulcer, with hernia of iris, occurring in purulent ophthalmia and in scrofulous children.—*Annales d'Oculistique*.

### Copaiba Suppositories.

Dr. J. H. Wehner proposes (*Med. and Surgical Reporter*), the following as a substitute for the exhibition of copaiba by the mouth in gonorrhœa:—

℞ Copaibæ..... f 3vj.  
Opil pulv..... gr. vj.  
Olei theobromæ, Cetacei, aa 3jss.  
Cere albæ..... gr. xlv.—M.

Misce secundum artem et fiant suppositoria, No. xij.

Signa. One to be introduced into the bowel morning and night.

### Carminative Mixture.

Take of Oil of camphor,  
Oil of cajeput, aa f 3ij.  
Oil of cinnamon (or cloves),  
f 3j.

Mix. Ten to fifteen drops on sugar for an adult.—Ed. N. R.

### To Disguise Castor-Oil.

Rub up two drops oil of cinnamon with an ounce of glycerine and add an ounce of castor oil. Children will take it as a luxury and ask for more.—*Druggists' Circular*.

### Vaginismus.

M. Guéneau de Mussy, in the *Gazette des Hôpitaux*, June, 1871, commends the treatment of this obstinate affection by the following formula:—

Take of Butter of cacao, 20 grammes (306.8 grs.).  
Bromide of potassium, 3 “ (46.0 grs.).  
Extract of belladonna, 1 “ (15.34 gr.).

Make into ten vaginal suppositories. One to be used each night for a week.

Some drops of the following formula are also to be given hypodermically:—

Take of Muriate of morphia, 50 centigr. (7.57 grs.).

Sulphate of atropine, 1 “ (1.584 gr.).

Distilled water, 10 grammes (153.4 grs.).

Mix and make a solution.

If pruritus exist with the vaginismus, the suppositories must be used for a longer time, and arseniate of soda be exhibited.

### Burgoyne's Cholera Pills.

Take of Tannate of quinia, 1 gramme (15.34 gr.).

Powdered opium, 5 centigr. (7.65).

Essence of aniseed, 2 drops.

Simple syrup, q. s.

Make into 10 pills, which may be taken in the course of one or two hours.

### Treatment of Malarious Dysentery.

Dr. Davis directs twenty grains of powdered ipecac to be given at once, and followed by a teaspoonful of the following solution every three hours in sweetened water:—

R Strychnia, 1 gr.

Nitric acid, 3 j.

Tinct. opii, 3 j.

Simple syrup, 3 j.

Water, 5 ij. M.

The ipecac is mostly followed by free vomiting, after which the strychnia mixture is generally retained. Rapid improvement follows and the mixture can be taken less frequently.—*Chicago Medical Examiner*, August, 1871.

### Drastic Pills for Dropsy.

Take of Eluterium (1.5 grains) 10 centigr.

Extr. of hyoscyamus (9 grains) 60 centigr.

Extract of gentian (9 grains) 60 centigr.

Mix and make into 10 pills.

One or two to be taken in dropsy, when it is desired to rapidly run off water by the bowels, and if necessary the dose may be increased to three.—*L'Union Médicale*.

### Formula for Chilblains.

In the *Revue de Thérapeutique Médico-Chirurg.* of November, 1871, the following recipes are highly praised for the treatment of this troublesome affection (Testelius' Formula):—

Tincture of iodine, 1 part.

Labarraque solution, 2 parts. Mix.

The affected part to be well anointed with this and dried by the fire. This formula is only to be applied where the skin is not broken.

For cracks and chaps the best preparation is made by heating honey in the oven. When honey is so heated a sort of scum rises to the top; this is to be removed until no more is formed. The liquid left behind is oily, not sticky. It is to be applied to the hand or affected part after washing, and is said to be very efficacious. During the latter part of the siege of Paris honey could no longer be obtained, and the following formula of M. Cazenave was much applauded as a substitute:—

Take of Tincture of aloes, 2 to 4 parts.

Glycerine, 30 parts. Mix.

On retiring to bed a piece of cloth wet with this is to be applied over the chapped places, and the hands then gloved.

The following is taken from the *Georgia Medical Companion*, October, 1870:

A perfectly safe and effectual remedy for chilblains is, Mr. Skey says, obtainable in the employment of laudanum, taken internally in very small doses, of from two drops for young children, night and morning, up to six or eight for adults. It is in such quantities perfectly

harmless, and, as a rule, will effect a cure in the course of four or five days.

Dr. George P. Rugg, in a letter to the *Lancet*, commends "chloralum" for unbroken chilblains. It should be applied undiluted, night and morning, using a moderate amount of friction.

The following recipes appeared in the *Pharmaceutical Journal*:—

℞ Glycerine, ʒ iij.  
Tinct. of arnica, ʒ j.  
Spirit of camphor, ʒ ss.  
Rose-water, ʒ j.

To be well rubbed in, night and morning.

Dr. Dewar's Lotion:—

℞ Sulphurous acid, Glycerine, āā, ʒ j.  
Distilled water, ʒ ij.  
℞ Lin. belladonna, ʒ ij.  
Lin. aconiti, ʒ ij.  
Acid. carbolic, ℥ x.  
Collodion flexile, ad ʒ j.—M.

Apply with a camel-hair brush.

The above is for unbroken chilblains; if they are broken, the lin. aconite is to be omitted.

### Fever Mixture.

The value of aconite in allaying fevers is apparently not so completely recognized by the profession as it ought to be, and having found the following recipes very useful in allaying fever, and in controlling it, when not dependent upon a deep-seated cause, I offer them here.—[Ed. N. R.]

Take of Tincture of aconite root, gtt. xxiv.  
Sweet spirits of nitre, f ʒ ij.  
Solution (or mixture) of citrate of potash, f ʒ iv.

Mix. S. Tablespoonful every one, two, or three hours.

This formula, containing two drops of the tincture of aconite root to the dose, should be given cautiously, and every hour only in urgent cases which can be very carefully watched. Many women will scarcely bear it given every two hours. The following formula is more generally applicable and safer:—

Take of Tincture of aconite root, gtt. xii.  
Sweet spirit of nitre, f ʒ ij.

Solution (or mixture) of citrate of potash, f ʒ iij.

Mix. S. Tablespoonful every one or two hours.

Where there is much restlessness with the fever the following formula is very useful:—

Take of Tincture of aconite root, gtt. xii.  
Sweet spirit of nitre,  
Comp. spirit of nitre, āā f ʒ iss.  
Camphor water, f ʒ iij.  
Morphiæ sulph., gr. ss.

Mix. S. Tablespoonful every one or two hours.

### Van den Court's Pills for Chordee.

Take of Extract of belladonna, gr. ij.  
Lupuline, grs. xij.  
Camphor, gr. xij.

Mix and make into eight pills.

S. Take from two to four at night.—*London Lancet*.

### Formula for Vesical Catarrh.

Fluid extract buchu,  
" " uva ursi, āā ʒ ss.  
" " gelsemium, ʒ j. M.

S. 50 drops five times daily.—Dr. T. C. Miller, *Journal of Materia Medica*.

### Iodide of Iron and Cod-Liver Oil.

Dr. I. Cummiskey commends the following formula as affording a stable compound, of a beautiful dark-red color:—

Take of Iodide of Iron, gr. lxiv.  
Ether sulphuric, q. s.  
Cod-liver oil (clarified), Oj.

Dissolve in a mortar the iodide of iron in a slight excess of ether, and add the oil gradually, stirring with the pestle rapidly until the mixture is complete. Keep in a tightly-corked bottle.

The proportion here given is half a grain of the iodide to one drachm of the oil; the dose is from f ʒ i. to f ʒ ss.—*Philadelphia Medical Times*, Nov. 15, 1871.



**Gastralgic Pills.**

Take of Extract of belladonna, 0.30 grm.  
Sulphate of quinia, 2.00 grm.  
Extract of valerian, q. s.  
Mix and divide into fifteen pills.  
S. One to be taken three times a day.  
—*Zeitschrift des Allgemein. Oester. Apotheker-Vereines*, October 20, 1871.

**Cure for Corns.**

Bathe the feet well in warm water, then with a sharp instrument pare off as much of the corn as can be done without pain or causing it to bleed, and dress once a day with the following salve:—

R Black oxide of copper, gr. xv.  
Lard,  $\frac{3}{4}$  ss. M.  
—*Chemist and Druggist*, Nov. 15.

**Salve for Chapped Lips and Hands.**

Take of White wax, two ounces.  
Spermaceti, one ounce.  
Oil of almonds, four ounces.  
Honey, two ounces.  
Essence of bergamot, quarter of an ounce, or any other scent.

Melt the wax and spermaceti; then add the honey, and melt all together, and when hot add the almond oil by degrees, stirring it till cold.

**Carlo Parvesi's Styptic.**

Take of Collodion, 100 parts.  
Carbolic acid, 10 parts.  
Tannin (Pelouse's), 5 parts.  
Benzoic acid (from gum), 5 parts.

Mix the ingredients in the order above written, and agitate until perfect solution is effected. This preparation has a brown color, and leaves on evaporation a strongly adherent pellicle. It instantly coagulates blood, forming a consistent clot, and a wound rapidly cicatrizes under its protection.—*Carlo Parvesi*. (*American Journal of Dental Science*.)

**Depilatory Powder.**

Take of quicklime, gram. xxx.  
Yellow sulphate of arsenic, gram. ii.  
Starch in powder, gram. xxiv.  
Mix. To use this powder, it is only necessary to dissolve it in a small quantity of water, and apply it to the spot from which we desire to remove the hair. From one to two minutes are sufficient to produce this result.—*Repertoire Pharmaceutique*.—*Georgia Med. Companion*.

**Powder**

For excessive perspiration of the hands and feet:—

Carbolic acid, 1 part.  
Burnt alum, 4 parts.  
Starch, 200 parts.  
French chalk, 50 parts.  
Oil of lemon, 2 parts.

Make a fine powder, to be applied to the hands and feet, or be sprinkled inside of gloves or stockings.—*Pharmaceutische Centralhalle*.—*Georgia Med. Companion*.

**Glycerine Cream.**

Receipt for chapped lips:—

Take of Spermaceti, four drachms.  
White wax, one drachm.  
Oil of almonds, two troy ounces.  
Glycerine, one troy ounce.

Melt the spermaceti, wax, and oil together, and when cooling stir in the glycerine and perfume.—*Georgia Med. Companion*.

**Styptic Cotton.**

Dr. Jas. Cummiskey commends (*Phila. Med. Times*, Jan. 1, 1872) the following modification of Dr. Ehrle's formula:—

Take cotton of the best quality; boil in a weak solution of soda (four per cent.) for about an hour; wash with cold water; press out and dry. Then steep the cotton in Liquor ferri sulphatis (diluted one-third); press and air-dry; after which pick to pieces.

### Wine of Myrrh.

Dr. Delieux de Savignac, in a paper of some length on myrrh (*Bulletin Général de Thérap.*, Dec., 1871), commends the following formula:—

Take of Myrrh (choice pieces) 20 grammes (306 grs.).

Bitter orange peel, 15 grammes (245 grs.).

Malaga wine, 1 litre (1.75 pints).

Allow to macerate ten days, and filter.

Two tablespoonfuls are to be taken before or after eating, at the moment when the pain is expected to occur.

### Catechu and Opium as an Astringent in Gleet.

Dr. R. Locke Johnson extols, for the cure of gleet, an astringent injection composed of:—

℞ Tinct. opii..... 3 j.

Tinct. catechu..... 3 ss.

Mist. acaciæ..... 3 ij.

M.—To be used twice daily.

He relates one case in which the discharge ceased after the second application, and did not return.—*Medical Press and Circular*, Aug. 23, 1871.

### Antitherpetic Solution.

(PURDON.)

Take of Chromic acid, 4 grammes (61.3 gr.).

Distilled water, 30 grammes (460 grs.).

Dissolve.

This solution is to be used as a local application in tinea tonsurans, tinea circinnata, sycosis, and other parasitic affections.—*L'Union Médicale*.

### Tonic Febrifuge Wine.

(OROSI.)

Take of Yellow cinchona bark. 6 parts.

Gentian root..... } each  
Bitter orange peel... }  
Chamomile flowers... } 4 parts.

Spanish wine..... 250 parts.

Macerate eight days and filter.

Dose: From 60 to 100 grammes per day when the fever is broken.—*L'Union Médicale*.

### Formula for Cystitis.

The following is used by Prof. Gross to relieve the irritation of the bladder produced by the presence of a stone:—

℞ Uvæ Ursi..... 3 j.;

Sodæ Bicarb..... 3 ij. M.

S. Add to one and a half pints of boiling water, and take a wineglassful two or three times daily.—*Phila. Med. Times*.

### Strumous Otitis.

Prof. Gross practises the following treatment:—

After the ear is well washed out with tepid water, the following solution will be applied with a camel's-hair brush, once daily, until the discharge is materially lessened; and after that every third or fourth day, as the case may require:

℞ Argent. Nit..... gr. x.;

Aquæ..... f 3 j. M.

A blister will also be applied behind the ear, to be renewed every eight or ten days.

This patient will also take in pill form, three times daily,—

℞ Ext. cinchonæ..... gr. ij.;

Ferri iodid..... gr. ʒ;

Hydrarg. chlor. corros... gr. ʒv. M.

The diet will be unstimulating, yet at the same time nutritious and easy of digestion. All red meats and coffee should be forbidden; but oysters, eggs, poultry, milk, tea, stale bread, and fresh fruits may be liberally partaken of. The patient will also take ample exercise in the open air, guarding from cold by wearing flannel next to the skin.—*Phila. Med. Times*.

### Rochard's Ointment.

This preparation is used by Dr. Dubois (Lecturer on Diseases of the Skin, Uni-

versity of Pennsylvania,) as a mild caustic to remove non-syphilitic condylomata or warts:—

℞ Iodini pulv. .... gr. viij.;  
Hydrarg. chlor. mit. .... ℥i.;  
Adipis. .... ʒij.  
Misce. Fiat unguentum.

### Formula for Tapeworm.

Dr. S. Q. Knight says (*Phil. Med. Times*, Jan. 1, 1872):—My friend Dr. Edwin Morris, of Spalding, England, has used areca-nut with success. I have found kameela successful in cases occurring in my own practice in which other remedies have failed.

Mrs. A., aged fifty-six, suffered from tape-worm, and had been treated at different times by means of purgatives, with liquid diet, emulsion of pumpkin-seed, oil of turpentine, and oil of male-fern, but without the desired effect, although small portions of the worm were passed. When I saw the patient for the fourth time, I ordered the following:—

℞ Kameelæ. .... ʒss.;  
Syrupi simplicis. .... f ʒj. M.  
S.—Take a tablespoonful at a dose.

Next morning, having taken one dose, the patient passed a tapeworm fifteen feet in length. The remaining dose produced no effect. The patient recovered her health, and has remained well for two years.

Two other cases, having the same symptoms, were treated by me with kameela, and both terminated successfully.

### Sulpho-Carbolate of Soda in Scarlatina.

Dr. J. B. Crawford, of Wilkesboro' (*Trans. of Med. Soc. of Pennsylvania*), says:—"Scarlatina occurred in almost every section of Luzerne county, varying much in severity in different cases and localities, but seldom evincing a marked malignancy of character. In addition to the better-known remedies, the sulpho-carbolate of soda has been used with very satisfactory results in the treatment. I take this occasion to strongly recommend its use to those practitioners who have not

yet tested its efficacy in the treatment of this disease. In about thirty cases of scarlatina, of average severity, I have relied almost exclusively upon this article, and have been highly gratified with the results. To a child of three years of age I would give one and a half to three grains, every two hours, during the continuance of the more severe symptoms of the disease. It is generally readily taken by the patient and well tolerated by the stomach when thus prepared:—

℞ Sodæ sulpho-carbolat. . 3 ij.  
Aquæ puræ. .... f ʒiv.  
Syr. aurant. cort. .... f ʒij. M.

Sig. A teaspoonful to be given once in two to four hours.—*Medical Cosmos*.

### Chills and Fever Remedies.

Ringler's fever tincture, in use in the Austrian Military Hospital, is prepared as follows:—

Take of Aloes. .... ¼ ounce.  
Camphor. .... 4 scruples.  
Orange peel and ele-  
campane root, of  
each. .... 8 ounces.

Bruise and digest with  
alcohol, 80 p. c. .... 10 pints.

for eight days; then express and add  
Sulphuric acid dilute. 12 ounces.  
Sulphate of quinine. 6 "  
Tinct. opii crocat.  
(Sydenham's Laud-  
anum) .... 1½ "

Two drachms of this tincture is given three hours before the expected paroxysm, with short diet. On the 7th, 14th, and 18th day after the last attack, the same dose is given; seldom fails. The following is said to be the formula for Warburg's Fever Drops:—

Take Aloes,  
Radix zedoar, of each. 1 drachm.  
Camphor,  
Croci, of each. .... 5 grains.  
Alcohol dilute .... 8 ounces.

Macerate for several days, filter, and add

Quinine sulph. .... ¼ drachm.

F. sol.; dose, four to six teaspoonsful during the day.—*Druggists' Circular*.

### Gelsemium in Irritable Bladder.

Dr. W. S. Hill commends, in the *American Journ. Med. Sciences* (Jan. 1), gelsemium in cases of irritable bladder. He combines it with carbonate of potash when the urine is acid, and the bromide when nervous symptoms are present. Thus:—

℞ Potassii bromid. .... gr. iv.  
Potass. carb. .... gr. iij.  
Extr. gelsem. fl. .... ℥ x.  
Aquæ ..... ʒ ij.

M. S. Take every sixth hour.

### Quinine Pills.

Dr. Ewart (*Indian Medical Gazette*, Nov. 1, 1871) commends the following method as forming soluble quinine pills, which may be made to contain 5 grains each, and yet not be above ordinary size.

Take of quinine. .... q. s.

Triturate well in a mortar until the crystals are thoroughly broken up, and then rub up with a saturated solution of citric acid, and divide into pills of the required size.

### Solution for Pruritus Vulvæ.

The following is commended by Mr. McGrath as almost a specific.

Take of Bichlorate of soda. .... 3 ij.  
Hydrochlorate of morphia gr. xx.  
Hydrocyanic acid. .... 3 j.  
Glycerine. .... f ʒ j.  
Distilled rose-water. .... f ʒ viij.

To be applied freely with a soft sponge morning and evening, the parts having been previously well washed.—*Canada Lancet*.

### Cream of Otto of Rose.

Spermaceti. .... 5 oz.  
White wax. .... 2½ oz.  
Oil of almonds. .... 1 lb.  
Rose-water. .... 6 oz.

Melt the wax and spermaceti in the oil with gentle heat, transfer the whole to a mortar previously warmed and capable of holding at least four times the quantity. Commence to stir with a pestle of

hard wood, using a bone spatula, and never cease stirring nor change the direction until the manipulation is complete. In a short time commence to add the rose-water slightly warmed, and then stir more briskly. When the creamy consistence is obtained add 20 drops of otto de rose, but the ointment should be quite cool before this is added. The cream should be covered and set aside for a night; and if any watery globules are observed to be stirring, let them be pressed out. This preparation will not keep over a month at the longest.—*Chemist and Druggist*.

### Treatment of Seborrhœa Capitis.

(PITYRIASIS CAPITIS.)

Dr. Louis A. Duhring writes as follows:—

The first thing to be done in these cases is to remove the masses of desiccated sebum and epidermis. This is accomplished by saturating the hair with olive oil, retaining it on the head over night, and then washing thoroughly with the following:—

℞ Saponis viridis. .... ʒ iv.  
Alcoholis. .... f ʒ ij. Misce.

This preparation is known as *spiritus saponis kalinus*.

If the amount of secretion be not great, the use of oil may be dispensed with. The way of applying the preparation is to take a small flannel rag, wring it out in hot water, and pour upon it about a teaspoonful of the spirit, which is to be rubbed into the head, adding a small quantity of warm water from time to time, so as to form a lather. This "shampooing" process is to be continued for ten minutes, when the head may be washed with pure water and thoroughly dried.

The application is to be made morning and evening, and may have to be continued for some time. When the scales have been entirely removed, some such mixture as the following oil must be ordered:—

℞ Acid. carbolic. .... 3 ss.

Ol. ricini,

Alcoholis. .... aa f ʒ ij. Misco.

Sig.—Apply after washing.

The object of this application is to relieve the dryness and contraction of the skin and hairs resulting from the use of the spiritus saponis kalinus.—*Phila. Med. Times.*

### Muriate of Ammonia in Bronchitis, Catarrhal Pneumonia, etc.

In obstinate acute bronchitis after the first intense stage, in catarrhal pneumonia both of children and adults, in bronchorrhœa, and also in ordinary chronic bronchitis, I have obtained more apparent good from the use of muriate of ammonia than any other remedy. Of course other secondary measures are to be vigorously used—counter irritants, poultices, support or diminution of food supply, etc., etc., as the case may call for. The following, the best formula for giving the muriate with which I am acquainted, is as follows:—

Take of Ammonia muriat. . . 3 ij.

Extr. glycyrrhiz. . . 3 j.

Mucil. acaciæ,

Aqua. .... aa f ʒ iij.

M. S. Teaspoonful for an adult every two hours—teaspoonful for a child a year old, every three hours.

Sometimes, however, the patients object to the mixture of sweet and salt, preferring the following:—

Take of Ammonia muriat. . . 3 ij.

Aqua. .... f ʒ vi.

Dose as before.

Where the cough is very annoying, ʒ. th of a grain of sulphate of morphia, or 10 to 15 minims of tincture of hyoscyamus, may be added to each dose.

In bronchorrhœa, the following may at the same time be used by inhalation twice or thrice daily:—

Take of Sat. solution of alum, ʒ vj.

Tr. hyoscyam. . . ʒ ss.

M.

(Ed. N. R.)

### M. Delioux's Mercurial Collodion for the Prevention of Pitting by Small-Pox.

Take of Collodion, 80 gram. (480 gr.)

Venice turpentine, 1.50 gram. (23 gr.)

Corrosive sublimate, 0.30 gram. (4.6 gr.)

Mix. When the subject is young, less of the sublimate to be used—0.20 gram. for from 10 to 15, less for under 10 years of age. When the disease is very violent in the adult, or the application be made late, 0.40 gram. may be used. The collodion is kept in a bottle, with a mouth sufficiently large to allow a camel's-hair brush the size of the finger to be used, and is to be freely applied to the whole surface of the face, and a second coat is to be given where the movements of the mouth, eyes, etc., cause the first to crack, and also where the pock is apt to be most thickly produced. If the contraction of the collodion gives pain a few drops of castor oil should be added to it.—*Bull. de Thérap. Médico-Chirurg.*, Jan. 15, 1873.

### Muriate of Ammonia in Hepatitis.

Dr. J. L. Hill derived great benefit from use of the following, in a severe, obstinate case of hepatitis:—

℞ Ammoniæ muriatis. . . ʒ iij.

Tr. cimicifugæ. .... ʒ iiss.

Aque. .... 3 ij. M.

Sig.—Teaspoonful four times a day, all other treatment discontinued.—*Orange Med. and Surg. Journal.*

(The muriate of ammonia alone would probably have answered as well and has been much more elegant.—Ed. N. R.)

### Chloral in Combination.

Dr. I. E. Bowers commends the following:—

℞ Chloral hydrate, grs. xxx.

Tr. opii, gtt. xx.

Potass. bromidi, grs. xv.

This dose was given to three patients.

They went to sleep in about fifteen minutes, slept all night, and greater part of next day; they could be easily aroused to take food, but would almost immediately turn over and go to sleep again. As there were no bad symptoms they were allowed to sleep till the effect passed off, and the patients were found much benefited by the long rest.

In another case the following was employed:—

Make an aqueous solution of the salt grs. x. ad 3 j. and of this take at a dose:

R Sol. chloral hydrate, 3 ij—3 vj.

Tinct. hyoscyami, 3 j—3 ij.

Syr. simpl. vel rhei aromat., 3 ij.

Aque puræ, 3 ss—3 j.

(These doses of chloral are excessive. —Ed. N. R.)—*North Western Medical and Surg. Journal*, Dec., 1871.

### Vaginal Suppositories in Ulceration of the Os Uteri.

Between the intervals of cauterization, vaginal suppositories will prove useful adjuvants. They may be used every night or alternate night by being pushed up to the cervix at bed-time by the patient. These I have usually directed to be made of ungt. hydr. nitrat. with extract of belladonna, and occasionally a drop of carbolic acid, the whole in capsule. A very good formula for these suppositories is:—

R Ungt. hydrargyri nitr. 3 j.

Acid. tannic. .... ʒ j.

Ulni pulv. .... q.s. M.

Ft. suppos. vj.

S.—One to be used at bed-time.

If the ulcer is irritable, or much pain is experienced, an anodyne may be added; as morphia or extract belladonna. In a case where the ulceration is slight it may be entirely cured by these suppositories in connection with the free use of vaginal ablutions.—Dr. T. C. Smith, *Med. and Surg. Reporter*, Jan. 20, 1872.

### Phosphorus Pills.

The following formula for the admin-

istration of phosphorus originated with Dr. Radcliffe. Take of phosphorus, six grains; suet, six hundred grains; melt the suet in a stoppered bottle capable of holding twice the quantity indicated; put in the phosphorus, and when liquid, agitate the mixture until it becomes solid, divide into three-grain pills, and cover with gelatine. Each pill will contain one thirty-third part of a grain of phosphorus.

### Formula for Tapeworm (Suvacher).

Take of Castor oil, 60 grammes (15 3 by weight).

Oil of turpentine, 15 grammes (3.8 3).

Gum arabic, 15 grammes (3.8 3).

Mint water, 60 grammes (15 3).

Simple water, 30 grammes (7.6 3).

Mix, and make a potion to be taken early in the morning at one draught.—*L'Union Médicale*.

### Cod-Liver Oil Disguised.

M. H. Duquesnal states that in the following formula the cod-liver oil is so masked that it cannot be smelled or tasted, provided the light oil be used. In a closed bottle the preparation keeps indefinitely; exposed to the air it loses after a time its aromatic odor, regaining the sensible qualities of cod-liver oil.

Take of Cod-liver oil. .... 100 parts.

Essential oil of Euca-

lyptus. .... 1 part.

Mix. Dose 1 to 10 grammes.

—*Bulletin Général de Thérapéut.*, Dec. 30, 1871.

### Pills of Iron and Mint.

Take of sulphate of iron. . . 6 gram.

Powder of soap. .... 0.45 gram.

Oil of mint. .... 1 gtt.

Gum tragacanth. .... 0.06 gram.

Mix and divide into 6 pills.—*Journal de Pharm.*, Dec., 1871.

**Granulated Cod-Liver Oil.**

M. Sissier claims for the following preparation many advantages:—

Take of White gelatine .....	4 grms.
Distilled water.....	25 "
Simple syrup.....	25 "
Finely powdered sugar.	50 "
Pure cod-liver oil.....	50 "

The gelatine should be cut and placed in a wide-mouthed bottle; the water and syrup added, and the whole heated in a water-bath until dissolved. The cod-liver oil and the sugar should next be well rubbed up together in a mortar, and then the warm solution of gelatine stirred in, the stirring being continued until the mixture is quite cold.

After some time the mass will present the appearance of a dense homogeneous jelly; it is then necessary to add a sufficient quantity of finely-powdered sugar to form a firm paste, weighing 250 grams. The paste is spread upon a marble slab, divided into small pieces and left for some hours to harden. It is then divided into small pieces the size of a lentil, which, after further drying, become sufficiently firm to allow of granulation in a mortar. The drying of this granulated powder is accomplished on a stove at a temperature of 30° to 35° C. The product will contain one-fifth of its weight of cod-liver oil. It should be kept in well-closed bottles.—*Journal de Pharmacie et de Chemie.*

**Reduced Iron Lozenges.**

Take of Reduced iron.....	10 parts.
Refined sugar, in powder.....	250 parts.
Gum acacia, in powder.....	15 parts.
Mucilage of gum acacia.....	30 parts.
Distilled water....	a sufficiency.

Mix the iron, sugar, and gum, and add the mucilage and water to form a proper mass. Divide into lozenges, each of

which shall contain one grain, or 6.4 centigrams of reduced iron. Dry them in a hot-air chamber with a moderate heat.—*Pharm. Journal.*

**Tannic Acid Suppositories.**

Take of Tannic acid.....	36 parts.
Benzoated lard.....	44 parts.
White wax.....	10 parts.
Oil of theobroma....	90 parts.

Melt the wax and oil of theobroma with a gentle heat, then add the tannic acid and benzoated lard, previously rubbed together in a mortar, and mix all the ingredients thoroughly. Pour the mixture while it is fluid into suitable moulds to form suppositories, each of which shall weigh about 15.4 grains, or 1 gram.—*Pharmaceutical Journal.*

**Guaiac with an Alkali.**

BY CHAS. SYMES.

The following formula represents a common prescription:—

R Tinct. guaiaci.....	℥ ss.
Pot. bicarb.....	3 ij.
Spt. æther. nit. ....	3 iij.
Aquæ ad .....	℥ vi. M.

Now mix these ingredients in whatever order you please, and the resin will deposit in lumps, partly floating and partly adhering to the sides of the bottle, and no amount of shaking will distribute it evenly through the mixture again.

If, however, the proportionate quantity of powdered guaiacum (12 grains to 3 j) be first rubbed with a portion of the water, and in finishing the mixture the proportion of spirit equivalent to the tincture be added, a homogeneous and tolerably elegant mixture is formed, the powder being easily distributed through the fluid when required, even after it has been prepared some time.—*Pharmaceutical Journal.*

In a subsequent number of the same journal G. Wilborn states that there is no difficulty whatever in making the mixture in the following way:—1st, fit a cork to the bottle intended to hold the mixture;

3d, weigh the potass. bicarb. and put it into the bottle; 3d, add to it  $\frac{3}{4}$  v. of distilled water; 4th, measure the tincture and spirit together; 5th, pour these into the bottle, taking care that it falls clearly into the water, etc. (this is important for insuring a fine division of the resin); 6th, immediately cork and shake for a second or two; 7th, fill up with distilled water. When first made, the mixture has a dirty drab appearance, changing in two or three hours to a bright green. The precipitated resin is so finely divided, that after standing seven hours, it measured  $\frac{3}{4}$  iij., and at the end of three days occupied a bulk of  $\frac{3}{4}$  ij. The supernatant liquid is a clear brownish-yellow color; there is not the slightest adhesion of resin to the glass, and the precipitated resin is at once diffused through the liquid by agitation.

### Pills of Croton Oil and Opium.

Take of Croton oil..... 1 drop.  
Pulverized opium. 0.03 gramme.  
Bread crumb.... 0.10 "  
Mucilage of tragacanth, q. s.  
Make into one pill.—*Journ. de Pharm.*

### Formula for Chloroform.

Take of Chloroform..... 2 parts.  
Oil of sweet almonds... 3 "  
Syrup of acacia..... 40 "

Mix and agitate thoroughly.

Dose: Teaspoonful every 15 minutes.  
—*Revue de Thérap. Médico-Chirur.*, Jan. 1, 1872.

### Carbolic and Tannic Acid Injection for Gonorrhœa.

Mr. Jno. Ashmead praises most highly the following formula originally proposed by Mr. Wood:—

Take of Carbolic acid,  
Tannic acid,  $\frac{aa}{3}$  grs. viij.  
Glycerine... f  $\frac{3}{4}$  ss.  
Water..... ad f  $\frac{3}{4}$  j.

S. Use as an injection.

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### Treatment of Rheumatic Ophthalmia.

In a paper of some length on rheumatic ophthalmia, in the *Revue de Thérap. Médico-Chirurgicale*, Jan. 1, 1872, Dr. Tavignot states that early in the disease he orders the following formula:—

Take of Glycerole of starch... 60 parts.  
Veratria..... 1 part.

Mix. S. Make circumorbital frictions with a small quantity of this. To relieve the pain and promote absorption he has the skin above the eye pricked microscopically with the needle of Baunscheidt, or the rouleau of needles of M. Matthieu.

Internally he gives the following pills two to four times a day:—

Take of Veratria,  
Extract of opium,  
Extract of hyoscyamus,  $\frac{aa}{2}$  0.10  
gramme (1.53 gr.).  
Mix and make into 20 pills.

When the disease is chronic he uses the following:—

Take of Sulphate of quinia, 2 grammes  
(30.7 gr.).  
Powdered colchicum seeds 1  
gramme (15.84 gr.).  
Extract of digitalis, 0.25 centigrammes (3.8 gr.).

Mix and make into 20 silver-coated pills. Two to four daily.

### Phenol Sodique.

(BY E. WILDMAN, M.D., D.D.S.)

This preparation of carbolic acid is deservedly quite popular with the medical and dental professions. Its composition, so far as I have ascertained, has not been made public. The following formula is the result of numerous experiments, and will give an article that will compare favorably with the best French phenol sodique:—

Take of Carbolic acid in crystals, 188 grs.  
Caustic soda..... 31 "  
Pure water. 4 fluid oz. Mix.

The carbolic acid should be free from



offensive odor, such as is prepared for medicinal purposes. When first mixed it is nearly colorless, but in time assumes a wine color; does not deposit any tarry residue, as is too often found in the commercial article. Carbolic acid has a feeble action as an acid, combining definitely with a very small portion of alkali. When the quantity of soda used was just sufficient to neutralize the carbolic acid, the compound did not appear to be as efficient as the one resulting from the above formula.—*Phil. Dental Times*.

### Ethereal Solution of Quinine.

The following preparation is said to be especially useful for hypodermic use, being very concentrated and unirritating:—

Take of Quinia sulphate, 3 vj. + gr. xiiij.  
Dilute sulphuric acid,  
Aqua ammoniæ, aa q. s.  
Stronger ether, fl 3 xvj.  
Distilled water, q. s.

Dissolve the quinine, dried at 212° Fahrenheit previously to weighing, in a pint of water, by the aid of sulphuric acid. Filter if necessary, and introduce the solution into a four-pint bottle, adding sufficient water to make it measure 32 ounces. Precipitate the quinia from this solution by adding aqua ammoniæ, avoiding any excess. The quantity to be employed is best determined by a preliminary experiment, ascertaining the relative strength of the dilute acid and the aqua ammoniæ. Use a little more than double the amount corresponding to the quantity of sulphuric acid that has been found necessary to dissolve the quinine. When the mixture is sufficiently cooled, pour in 15 fluid ounces of stronger ether, and agitate till the whole of the quinia is dissolved. It sometimes happens that the quinia refuses to dissolve readily. In such cases the addition of a few drops more of aqua ammoniæ will bring about the desired result. The contents of the bottle arrange themselves in two distinct layers, the upper consisting of the ethe-

real solution of quinia, the lower, of an aqueous solution of sulphate of ammonia. The ethereal solution is to be separated, and evaporated at a moderate temperature till reduced to 2½ fluid ounces. To ascertain the precise strength of the solution, evaporate a few minims to dryness, and weigh the residue. If it contain more than one grain of quinia in five minims a sufficient quantity of ether must be added to bring it to that strength. The solution is to be kept in well stoppered bottles, and should not be exposed to light.—*American Journ. of Pharmacy*.

### Antiscorbutic Syrup.

Take of leaves of scurvy-grass (*Cochlearia*),

Leaves of water-cress,

Root of the wild radish, aa  
1,000 parts.

Fresh rind of bitter-

orange ..... 200 "

Dried leaves of

buckbean (*Ményanthes*) ..... 400 "

Very finely powdered

cinnamon ..... 5,000 "

Alcohol ..... 1,600 "

Water ..... 800 "

Sugar about ..... 5,000 "

Cut the radish into small pieces, and add to it a part of the alcohol, with the cinnamon and orange peel in shreds. Allow to macerate for 24 hours, when the whole is to be expressed very forcibly through a linen, and add the rest of the alcohol. Allow the resultant to stand in a tall vessel. Add to the buckbean double its weight of boiling water, and triturate with the scurvy-grass and water-cress. Express, and add the sugar, heating by means of a water-bath, and when cold strain through flannel. Decant the alcohol from the tall vessel carefully, so as to avoid mixing the precipitate which has formed, and add the spirits to the expressed juice. To every 100 grammes of the liquid add 160 grammes of sugar.—*La Santé Publique*, Dec. 14, 1871.

### Antiscorbutic Conserve (Cadet).

Leaves of Cochlearia Officinalis. .  
     Water-cress . . . . . } equal  
     Buckbean (Menyanthes } parts.  
     Trifoliata). . . . .  
     Cochlearia Armoracia. }

Juice of horse-radish.

Juice of Seville orange (Citrus Bigaradia).

White sugar, q. s.

Make into a conserve.

Dose, 3 to 15 drachms two or three times a day.—*Jeannel's Formulaire*.

### Antiscorbutic Juice (French Codex).

Take equal parts of fresh leaves of  
     Cochlearia Officinalis,  
     Water-cress,  
     Buckbean,

Put into a marble mortar and beat into mass. Express the juice and filter.

### Antiscorbutic Beer (French Codex).

Take fresh leaves of  
     Cochlearia Officinalis. . . . . 3  
     "      Armoracia . . . . . 6  
     Young shoots of Abies Pectinata 3  
     Recent beer . . . . . 200

Macerate for four days, agitating from time to time, and then express.

### Carbolic Acid Pills.

Take of Carbolic acid . . . . . 3 drops.  
     Soap powder. . . . . 0.70 gram.  
     Lycopodium. . . . . 0.06 "  
     Powder of gum tragacanth . . . . . q. s.

For six pills. The first two ingredients make a semi-fluid mass that the lycopodium does not absorb, but which acquires firmness upon the addition of the gum tragacanth.—*Journal de Pharmacie et de Chimie*.

### Resolvent Pomade.

Take of iodide of lead 2 prts. by weight.

Neapolitan

Ointment. . . 3 " "

Lard. . . . . 10 " "

Mix together. To be used as an unguent in commencing periostitis night and morning. Each application to be followed by a poultice of bread and milk.—*L'Union Médicale*.

### Jeannel's Laxative Powder.

Take of Tartrate of soda and  
     potash . . . . . 50 parts.  
     White sugar. . . . . 100 "  
     Bicarbonate of soda. . . 22 "  
     Powdered tartaric acid 20 "  
     Oil of lemon. . . . . q. s.

Dose—A teaspoonful in sweetened water.—*Jeannel's Formulaire*.

### Creasote Pills.

Take of Creasote. . . . . 1 drop.  
     Soap powder. . . . . 0.25 gram.  
     Crumb of bread. . . . 0.20 "  
     Lycopodium. . . . . 0.05 "

For six pills. The soap powder forms with the creasote a homogeneous mass, to which the crumb of bread gives plasticity.

Or, better still—

Take of Creasote. . . . . 3 drops.  
     Crumb of bread. . . . 0.60 gram.  
     Lycopodium. . . . . 0.06 "  
     Mucilage of gum tragacanth. . . . . q. s.

Make into six pills, each of which contains half a drop of the active constituent.—*Journal de Pharmacie et de Chimie*.

### Benzoic Acid Potion for Chronic Catarrh, Uric Acid (Bouchardot), Gravel, etc.

Take of Acid. benzoic, 5 gram. (77 gr.)  
     Mucilage of acacia. 125 gram.  
     (36½ ℥.)

The whole to be taken in the course of the day in tablespoonful doses.—*Jeannel's Formulaire*.

**Benzoic Acid Mixture (Bouchardot).**

Take of Benzoic acid..... 1 to 5 gram.  
 Phosphate of soda ... 10 "  
 Distilled water..... 100 "  
 Simple... 30 "

M. The whole to be taken in the course of the day; useful in gravel.—*Jeannel's Formulaire*.

**Malherbi's Vin Digestif.**

Take of Bordeaux wine of cinchona bark.  
 100 parts.  
 Sirop thebaïque..... 30 "  
 Pure hydrochloric acid 1 "

Two to six tablespoonfuls in the indigestion of old people with foul eructations, where there is reason to suppose digestion is imperfect from want of gastric juice.—*L'Union Médicale*, Dec. 23, 1871,

**Anti-dyspeptic Pills (Sass and Lincoln).**

Take of Sulphate of quinine.. 1.5 gram.  
 (23 grs.)  
 Pepsine..... 7 gram. (107 grs.)  
 Extract of absinthium, q. s.

Make into 40 pills.

Two pills to be taken after eating by persons suffering from functional disturbance of the stomach, in pyrosis, gastralgia after eating, and especially where the digestion of nitrogenous matters is supposed to be enfeebled.

**Dr. H. Hartshorne's Cholera Remedy.**

Take of Chloroform..... }  
 Tinct. opium..... }  
 Spts. camphor..... } 3 f. 3 iss.  
 Spts. ammonia, aromatic..... }  
 Creasote..... gtt. iij.  
 Oil of cinnamon..... gtt. viij.  
 Brandy ..... f 3 ij.

Mix. Dilute a teaspoonful with a wine-glass of water, and give two teaspoonfuls every five minutes, followed by a lump of ice.

**A Rapid Method of Preparing Mercurial Ointment.**

M. Lucien Lebeuf states that the following process yields a preparation in all respects identical with the mercurial ointment of the Codex.

Take of Ether..... 4 grms.  
 Benzoin..... 20 "  
 Oil of sweet almond.. 5 "  
 Dissolve and filter.

Put 1 kilogramme of mercury in a wide-mouthed glass-stoppered jar of 5 to 6 times capacity of the mercury and tincture. Add the tincture and shake briskly, from time to time removing the stopper to allow the vapor of ether to escape. When the mercury has been reduced to an exceedingly fine powder, decant the major part of the supernatant liquid, and again shake vigorously until a gray mass is obtained, having the consistency and unctuousity of an ointment. This stage of the preparation is a very important one, and care must be exercised, as the more the mercury is divided the less time will its extinction in the fat require. Take then 920 grammes of lard and 80 grammes of wax, and melt them together with a mild heat. When the mixture is cold, put a little of it in a mortar, and put on it the divided mercury. Immediately triturate vigorously, rinsing frequently the bottle which has contained the mercury with a part of the decanted tincture, adding it each time to the contents of the mortar. After a vigorous trituration of from 40 to 50, the ether should be evaporated and the mercury extinguished. The remainder of the lard may be now added, and the whole well triturated for from 15 to 20 minutes.—*Revue de Therapeut. Med.-Chir.* Feb. 1, 1872.

## Part 5.

### GENERAL RECEIPTS.

#### Essence of Moss Rose.

Otto Rose, 3 iss.  
Ess. Ambergris, 3 iiss.  
Ess. Musk, 3 j.  
Alcohol, 3 xv.  
Aq. Rosæ Conc., 3 x.  
—*London Pharm. Journal.*

#### Aniseed Cordial.

R Ol. Anisi, 3 ss.  
Sacch. Alb., 3 ij.  
Syr. Simpl., 3 iij.  
Sp. Vin. rect., 3 viij.  
Aq. destill., 3 xxx.

The oil to be well rubbed with the sugar; add the water gradually; mix the remaining ingredients, and filter.

#### Fumigating Pastilles.

1—Take Benzoin..... 2 ounces.  
Balsam of Tolu,  
Yellow Sandal-wood, of  
each..... 4 drachms.  
Nitre..... 2 drachms.  
Labdanum ..... 1 drachm.  
Charcoal..... 6 ounces.

Mix with a solution of gum tragacanth, and divide the mass into pastilles, cone-shaped, and dry them in the air. The foregoing is the formula of the Paris Codex.

2—Take Benzoin..... 4 ounces.  
Cascarilla ..... ½ ounce.  
Nitro and Gum Arabic,  
of each..... 8 drachms  
Myrrh..... 1 drachm.  
Oils of Nutmeg and  
Cloves, of each... 25 drops.  
Charcoal..... 7 ounces.

All in fine powder. Beat them to a smooth mass with cold water, q. s., and form into small cones and dry in the air.  
—*Druggists' Circular and Chemical Gazette.*

#### Hair Wash.

R Glycerine, 3 ij.  
Tincture of Myrrh, 3 j.  
Cologne, 3 j.  
Tincture of Cantharides, 3 ss.  
Distilled Water, 3 xxiv.

M.

—*Pharmaceutical Journal.*

#### Hair Dye.

##### No. 1 Solution.

Argent. Nitr. Cryst., 3 j.  
Gum Acaciæ, 3 j.  
Aq. Destillat., 3 ij.

M.

##### No. 2 Solution.

Acid. Pyrogallic, gr. iv.  
Aq. Destil., 3 ij.

M.

E. ASTER.

**Artificial Fruit Essence.****Pineapple Essence.**

Chloroform.....	1 part (by volume).
Aldehyde.....	1 "
Butyrate of ethyl....	5 "
Butyrate of amyl....	10 "
Glycerine.....	8 "
Alcohol.....	100 "

**Raspberry Essence.**

Nitric ether.....	1 part.
Aldehyde.....	1 "
Acetate of ethyl....	5 "
Formiate of ethyl....	1 "
Butyrate of ethyl....	1 "
Benzoate of ethyl....	1 "
Enanthylate of ethyl.	1 "
Sebacic ether.....	1 "
Salicylate of methyl..	1 "
Acetate of amyl....	1 "
Butyrate of amyl....	1 "
Tartaric acid.....	5 "
Succinic acid.....	1 "
Glycerine.....	4 "
Alcohol.....	100 "

**Strawberry Essence.**

Nitric ether.....	1 part
Acetate of ethyl....	5 "
Formiate of ethyl....	1 "
Butyrate of ethyl....	5 "
Salicylate of methyl..	1 "
Acetate of amyl....	3 "
Butyrate of amyl....	2 "
Glycerine.....	2 "
Alcohol.....	100 "

—*The Druggists' Circular.*

**Fine Blue Ink.**

Take of yellow prussiate of potassa 10 parts, dissolve in 160 parts of pure distilled water; gradually and while stirring add to that solution a mixture of five parts of a solution of perchloride of iron (sp. gr. 1.480) and 160 parts of water. The ensuing precipitate is collected on a filter, and washed with distilled water until the wash-water begins to assume a blue color, after which the precipitate,

which was then become completely soluble in distilled water, is dissolved by 400 parts of that water.

—Dr. DINGLER, *Chemical News*,  
from *Polytechnische Journal*, Von Dingler.

**Amandine.**

Bitter almonds (blanched), 4 oz.

Beat them in a mortar with a small quantity to a smooth paste, and add:—

Orris root, in fine powder.

Soap, in fine powder, each 1 oz.

Glycerole of starch, " 2 oz.

Clarified honey, " 1 oz.

Oil of bitter almonds, 5 drops.

Oil of lavender,  $\frac{1}{2}$  fl. drm.

Oil of bergamot, 1 fl. drm.

Tincture of cochineal, q. s. to color.

**Mix.**

Or,

Blanch 12 oz. of bitter almonds, and beat them in a mortar with a small quantity of rose or other water to a smooth paste; then add 7 oz. of rice flour, 8 oz. of bean flour, 1 oz. of orris powder, and when perfectly mixed,  $\frac{1}{2}$  oz. carbonate of potash, dissolved in rose-water; again beat together, and add 3 oz. of spirituous essence of jessamine, 2 drops of oil of rhodium, and one of neroli.

**BEARLES.**

Or,

Take of fine pale honey (or strong syrup) 4 oz., white soft soap made from lard and potash, 2 oz., mix them thoroughly in a Wedgewood mortar, adding, if necessary, two or three teaspoonfuls of solution of potash, so as to produce a thoroughly homogeneous paste. To this add and rub in by degrees, and very gradually,

Oil of almonds, 3 $\frac{1}{2}$  lbs.

Previously mixed and scented with

Essential oil of almonds.

Essence of bergamot, of each, 3 fl drms.

Oil of cloves,

Balsam of Peru, of each 1 $\frac{1}{2}$  drm.

And continue the trituration until the whole assumes the appearance of a rich

transparent jelly. Finally, put the paste into pots or wide-mouthed bottle.

[NOTE.—The balsam ought to be triturated with a little of almond oil, warm before adding to it the rest, and, after all the scents are added, the oil should be allowed to settle for two or three days, and the clean portion only used.]

In using, a lump of amandine, the size of a large pea, is rubbed with a few drops of warm water, and the rich, white lather applied to the hands, face, neck, etc. In a short time the skin may be wiped with a soft napkin.

—*Pharm. Journal and Transactions.*

## Syrups for Mineral Waters.

The following formulæ for mineral water syrups are from the Druggists' Circular:

### 1. Simple Syrup.

White sugar.....10 pounds.

Water... ..1 gallon.

Isinglass (best)..... $\frac{1}{2}$  ounce.

(Or, the white of an egg.) “

Dissolve the isinglass in hot water, and add it to the hot syrup. The syrup is to be made with gentle heat, and then strained.

### 2. Lemon Syrup.

Grate off the yellow rind of lemons, and beat it up with a sufficient quantity of granulated sugar. Express the lemon-juice, add to each pint of juice 1 pint of water and  $3\frac{1}{2}$  pounds of granulated sugar, including that rubbed up with the rind; warm until the sugar is dissolved, and strain.

### 3. Another Formula.

Simple syrup.....1 gallon

Oil of lemon.....25 drops.

Citric acid.....10 drachma.

Rub the oil of lemon with the acid, add a small portion of syrup, and mix.

### 4. Another Formula.

Dissolve 6 drachms of tartaric acid and 1 ounce of gum-arabic, in pieces, in one gallon of simple syrup; then flavor with  $1\frac{1}{2}$  fluid drachm of best oil of lemon. Or,

flavor with the saturated tincture of the peel in Cologne spirits.

### 5. Strawberry Syrup.

Strawberry juice.....1 pint.

Simple syrup.....8 pints.

Solution of citric acid

(see below).... .2 drachma.

### 6. Another Formula.

Fresh strawberries... 5 quarts.

White sugar.....12 pounds.

Water.....1 pint.

Sprinkle some of the sugar over the fruit in layers, and allow the whole to stand for several hours; express the juice and strain, washing out the pulp with water; add the remainder of sugar and water, bring the fluid to the point of boiling, and then strain. This will keep for a long time.

### 7. Raspberry Syrup.

Raspberry juice.....1 pint.

Simple syrup.....2 pints.

Solution of citric acid.2 drachma.

Raspberry syrup may also be made in a way similar to No. 6 for strawberry.

### 8. Vanilla Syrup.

Fluid extract of va-

nilla.....1 ounce.

Citric acid..... $\frac{1}{2}$  ounce.

Simple syrup... ..1 gallon.

Rub the acid with some of the syrup, add the extract of vanilla, and mix.

### 9. Vanilla Cream Syrup.

Fluid extract of va-

nilla .....1 ounce.

Simple syrup.....3 pints.

Cream (or condensed

milk).....1 pint.

May be colored with carmine.

### 10. Cream Syrup.

Fresh cream..... $\frac{1}{2}$  pint.

Fresh milk..... $\frac{1}{2}$  pint.

Powdered sugar.....1 pound.

Mix by shaking, and keep in a cool place. The addition of a few grains of bicarbonate of soda will for some time retard souring.

**11. Ginger Syrup.**

Tincture of ginger...2 fl. ounces.  
Simple syrup.....4 pinta.

**12. Orange Syrup.**

Oil of orange.....30 drops.  
Tartaric acid.....4 drachma.  
Simple syrup.....1 gallon.  
Rub the oil with the acid, and mix.

**13. Pineapple Syrup.**

Oil of pineapple.....1 drachm.  
Tartaric acid.....1 drachm.  
Simple syrup.....6 pinta.

**14. Another Formula.**

Pineapple juice (by  
expression).....1 gallon.  
Sugar.....15 pounds.  
Fruit acid (see below) 2 ounces.

**15. Orange Syrup.**

Cream syrup.....1 pint.  
Vanilla syrup.....1 pint.  
Oil of bitter almonds.4 drops.

**16. Nectar Syrup.**

Vanilla syrup.....5 pinta.  
Pineapple syrup.....1 pint.  
Strawberry, raspberry,  
or lemon.....2 pinta.

**17. Sherbet Syrup.**

Vanilla syrup.....3 pinta.  
Pineapple syrup.....1 pint.  
Lemon syrup.....1 pint.

**18. Grape Syrup.**

Brandy..... $\frac{1}{2}$  pint.  
Spirits of lemon..... $\frac{1}{2}$  ounce.  
Tinct. of red sanders.2 ounces.  
Simple syrup.....1 gallon.

**19. Banana Syrup.**

Oil of banana.....2 drachma.  
Tartaric acid.....1 drachm.  
Simple syrup.....6 pinta.

**20. Coffee Syrup.**

Coffee, roasted..... $\frac{1}{2}$  pound.  
Boiling water.....1 gallon.

Enough is filtered to make one-half  
gallon of the infusion, to which add  
Granulated sugar....7 pounds.

**21. Wild Cherry Syrup.**

Wild cherry bark (in  
coarse powder)....5 ounces,  
Moisten the bark with water and let it  
stand for twenty-four hours in a close  
vessel. Then pack it firmly in a percola-  
tor, and pour water upon it until one pint  
of fluid is obtained.

To this add,

Sugar.....28 ounces.

**22. Winter-Green Syrup.**

Oil of winter-green..25 drops.  
Simple syrup.....5 pinta.  
Burnt sugar (to color) q. s.

**23. Sarsaparilla Syrup.**

Oil of winter-green..10 drops.  
Oil of anise.....10 "  
Oil of sassafras.....10 "  
Fluid ext. of sarsa-  
parilla.....2 ounces.  
Simple syrup.....5 pinta.  
Powdered ext. of  
liquorice..... $\frac{1}{2}$  ounce.

**24. Another Formula. (Parriah's.)**

Simple syrup.....4 pinta.  
Comp. syrup of sarsa-  
parilla.....4 fl. ounces.  
Caramel.....1 $\frac{1}{2}$  "  
Oil of winter-green...6 drops.  
Oil of sassafras.....6 "

**25. Maple Syrup.**

Maple sugar.....4 pounds.  
Water.....2 pinta.

**26. Chocolate Syrup.**

Best chocolate.....8 ounces.  
Water.....2 pinta.  
White sugar.....4 pounds.  
Mix the chocolate in water, and stir  
thoroughly over a slow fire. Strain, and  
add the sugar.

**27. Coffee Cream Syrup.**

Coffee syrup.....2 pinta.  
Cream.....1 pint.

**28. Ambrosia Syrup.**

Raspberry syrup.....2 pinta.  
 Vanilla syrup.....2 "  
 Hock wine.....8 ounces.

**29. Hock and Claret Syrup.**

Hock or claret wine..1 pint.  
 Simple syrup.....2 pinta.

**30. Solferino Syrup.**

Brandy.....1 pint.  
 Simple syrup.....2 pinta.

**31. Fruit Acid.**

(Used in some of the syrups).

Citric acid.....4 ounces.  
 Water.....8 "

Most of the syrups not made from fruits may have a little gum-arabic added, in order to produce a rich froth.

N. B.—Fruit essences and juices may be obtained from various dealers, such as Hance Brothers & White, of Philadelphia.

**Baking Powders.**

R Sodæ bicarb.  $\frac{3}{4}$  xvj.  
 Pulv. acid. tart.  $\frac{3}{4}$  xiv.  
 Pulv. magnesie carb.  $\frac{3}{4}$  vj.  
 Pulv. farinæ,  $\frac{3}{4}$  xij. M.  
 Rub through a sieve.

R Pulv. acid. tart.  $\frac{3}{4}$  viij.  
 Pulv. sodæ bicarb.  $\frac{3}{4}$  ix.  
 Rice flour,  $\frac{3}{4}$  x. M.

A teaspoonful to every pound of flour.

R Sodæ bicarb. 1 lb.  
 Farinæ, 1 lb.  
 Pulv. alum.  $\frac{1}{4}$  lb.  
 Magnesie carb.  $\frac{1}{4}$  oz.

Dry in oven separately. Magnesia may be put on the flour. Scotch farina answers best.

R Sodæ bicarb. 16 oz.  
 Acid. tart. exsicc. 8 oz.  
 Rice flour, 12 oz.

Rub together. — *Pharm. Journal and Trans.*

**Waterproofing.**

Bisulph. carbon.  $\frac{3}{4}$  ij.  
 Gutta percha,  $\frac{3}{4}$  ss.  
 G. asphalt.  $\frac{3}{4}$  ij.  
 Brown amber,  $\frac{3}{4}$  ss.  
 Linseed oil,  $\frac{3}{4}$  xij.

Dissolve the gutta percha in the bisulph. carbon, the asphalt and amber in the oil, and mix well.

**Test for the Genuineness of Silver Plating.**

In the January number of *Polytechnische Journal*, Von Dingler, occurs the following simple test by Prof. Boettger: The metallic surface is carefully cleaned, and a drop of a cold saturated solution of bichromate of potash in nitric acid is placed upon it, and immediately washed off with cold water. If the surface is silver, a blood-red stain of chromate of silver is formed. On German silver or Britannia ware a black or brown spot results.

**Ink—Extemporaneous.**

To the DRUGGISTS' CIRCULAR:

If you should ever be in a hurry about black ink, the following recipe will give you one of good color, and permanent, too:—

Take Acid. tannic,  
 " gallic ss.....gr. xx.

Dissolve in  
 Water.....2 oz.

Ferr. sulph. cryst.,  
 " subsulph. sicc. (Monsel's salt),  
 ss gr. xv.

Dissolve in  
 Water.....2 oz.

Mix the two solutions, and add  
 Mucilage.....2 $\frac{1}{4}$  fl. drachms.  
 Ol. cloves.....2 drops.

The above ink is none of the cheapest, being about \$1 per gallon; but for my own use I prefer it to every other.

Very respectfully yours,  
 POLYHISTOR.



### On the Preparation of Koumiss.

According to Dr. A. Oberstein, koumiss may be prepared as follows: Take a day's milk and dilute it with a sixth part of water and an eighth part of very sour cow's milk. An earthenware vessel, greater in height than width, is about two-thirds filled with the mixture, and covered with a wooden lid or cloth. Place in a warm place for twenty-four hours, after which whisk the milk well, and again allow to stand quietly for twenty-four hours; whisk again most thoroughly, till the whole is of a uniform consistency; the koumiss is then ready. Before use the koumiss must be beaten or whisked up. It may be preserved many months in a cellar.—*Year-Book of Pharmacy*.

### Mucilage of Gum Tragacanth.

R Pulv. tragacanth, 3 i.  
Glycerine, 3 vi.  
Aqua, ad  $\frac{3}{4}$  x.

Rub the tragacanth with the glycerine in a mortar, and then add the water. This will produce a mucilage at once, without the objection of bubbles incident to agitation.

H. E. GODFREY.

### A New and Cheap Method of Preparing Pure Dextrine.

For this purpose 500 parts of potato-starch are mixed with 1,500 parts of cold distilled water and 8 parts of pure oxalic acid, and this mixture placed in a suitable vessel on a water-bath, and heated until a small sample tested with iodine solution does not produce the reaction of starch. When this is found to be the case, the vessel is immediately removed from the water-bath, and the liquid neutralized with pure carbonate of lime. After having been left standing for a couple of days, the liquor is filtered, and the clear filtrate evaporated upon a water-bath until the mass has become quite a paste, which is removed by a spatula, and, hav-

ing been made into a thin cake, is placed upon paper and further dried in a warm place. Two hundred and twenty parts of pure dextrine are thus attained.—*Boston Journal of Chemistry*.

### Colors for Show-Bottles.

#### Red.

1. Liquid magenta dye, q. s.

This is a good color, stands well, and can always be deepened by addition of more magenta.

2. Iodine, 1 part. Potass. iodid., 1 part. Dissolve in a little alcohol and use as required.

3. Dissolve cochineal in liq. ammonia by aid of gentle heat. A beautiful color, but liable to fade.

#### Purple.

Plumbi acetat., 24; cochineal, 1 part.

#### Pink.

Cobalt. nitrat.: ammon. carb. (in excess). Very pretty.

#### Yellow.

1. Potass. bichrom., 6 parts; potass. carb., 4 parts.

2. Potass. chromas, q. s. Both these are fine and permanent colors.

#### Canary.

Picric acid dissolved in a little alcohol.

#### Orange.

Potass. bichrom., q. s. Sulphuric acid deepens the color.

#### Green.

Dissolve a few copper coins in nitric acid. Very permanent.

#### Emerald Green.

Nickel dissolved in dilute sulphuric acid by heat. Very beautiful and permanent color.

#### Blue.

Cupri sulph., 2 parts; acid. sulph., 1 part.

#### Royal Blue.

Cupri sulph., dissolve and add liq. ammonia to the required shade.—*Year-Book of Pharmacy*.

**Preservation of Eggs.**

- R Quick-lime, salt, &c 1 lb.  
 Saltpetre..... 3 oz.  
 Water..... 1 gallon.

Boil for 10 or 15 minutes, and when cold put in the eggs, small end downwards, using a vessel lined with lead, and placing in a cold, dry cellar.—*Year-Book of Pharmacy.*

**Curry Powder.**

- Coriander..... 8 parts.  
 Curcuma..... 6 "  
 Black pepper..... 4 "  
 Ginger..... 2 "  
 Fœnum Græcum..... 2 "  
 Cayenne pepper..... ½ "  
 Cumin seed..... ½ "

—*Vierteljahrsschrift für praktische Pharmacia.*

**Preservation of Beer.**

According to Habich and Von Fleck, beer as well as wine can be caused to keep well by simply heating for a little time to the temperature of 50° C.—*Ibid.*

**To make Water-proof Glue.**

One ounce of gum sandarac and one ounce of mastic are to be dissolved together in a pint of alcohol, to which an ounce of white turpentine is to be added. At the same time a very thick glue is to be kept ready, mixed with a little isinglass. The solution of the resins in alcohol is to be heated to boiling in a gluepot, and the glue added gradually with constant stirring, so as to render the whole mass homogeneous. After the mixture is strained through a cloth, it is ready for use, and is to be applied hot. It dries quickly and becomes very hard, and surfaces of wood united by it do not separate when immersed in water.—*Jour. of App. Chem.*

**Detection of Cotton in Linen Tissues.**

Zimmermann proposes to discover cotton in linen tissues by dipping the sample for eight or ten minutes into a mix-

ture of two parts of nitric and three parts of sulphuric acids. If cotton be present, gun-cotton, which can be extracted by a mixture of alcohol and ether, would be formed in this manner. Better than this, and really excellent for tissues that are not dyed, is Frankenstein's oil test. A sample of the goods is dipped into olive or colza oil, which is eagerly absorbed by the fabric. The sample is then pressed between pieces of unsized paper, in order to remove the excess of oil. If the tissue consists of mixed fibres, it will now appear striped, the linen threads having become transparent, and appearing lighter than the cotton threads, which remain unchanged. If the prepared sample, on the other hand, be placed upon a dark surface, the linen threads appear darker than those of the cotton. In this, as in all other tests mentioned heretofore, it is advisable to pull out a few threads from the edge of the sample before proceeding with the experiment.

The microscope affords to its possessors a very convenient test, all the various fibres having very distinctive physical characteristics as seen by it.—*The Technologist.*

**Red Fires without Sulphur.**

The ingredients must be perfectly dry, and be well mixed. They may be burned in open pans, or packed in paper moulds.

- R Nitrate of strontia... 4 parts.  
 Rosin..... 1 part.  
 Chlorate of potassa. 1 "

Gives a nearly orange-colored light.

- R Nitrate of strontia. 24 parts.  
 Chlorate of potassa. 16 "  
 Lycopodium..... 3 "  
 Sugar of milk..... 2 "

This gives a large, powerful, somewhat orange-colored flame.

- R Chlorate of potassa. 12 parts.  
 Nitrate of potassa. 5 "  
 Sugar of milk..... 4 "  
 Lycopodium..... 1 part.  
 Oxalate of strontia. 1 "

Gives a rose-colored flame.—*Druggists' Circular.*

**Cologne Water.****First Quality.**

Pure alcohol.....	6 gallons.
Oil of neroli.....	4 ounces.
“ “ rosemary.....	2 “
“ “ orange.....	5 “
“ “ citron.....	5 “
“ “ bergamot....	2 “

Mix with agitation; then allow it to stand for a few days perfectly quiet before bottling.

**Second Quality.**

Pure alcohol.....	6 gallons.
Oil of neroli.....	2½ ounces.
“ “ rosemary.....	2 “
“ “ orange-peel..	4 “
“ “ lemon.....	4 “
“ “ bergamot....	4 “

Treat in the same way as the first.

The quality of the product of course depends upon that of the oils used.—*Druggists' Circular.*

**Sachet Powders.****1. Violet Sachet.**

Take Black currant leaves.....	1 lb.
Cassia flower-heads.....	1 “
Rose leaves.....	1 “
Orris-root powder.....	2 lbs.
Oil of almonds.....	¼ dr.
Grain musk.....	1 “
Gum benzoin, in powder...½	lb.

Mix the ingredients well by sifting; keep them in a glass or porcelain jar for a week before offering for sale.

**2. Millefleurs Sachet.**

Take Lavender flowers, ground...½	lb.
Orris root.....	1 “
Rose leaves.....	1 “
Benzoin.....	1 “
Tonka beans.....	½ “
Vanilla.....	½ “
Sandal-wood.....	½ “
Musk.....	2 drs.
Civet.....	2 “
Cloves, ground.....	½ lb.
Cinnamon.....	2 ozs.
Allspice.....	2 “

—*Druggists' Circular.*

**Vanilla Pastilles.**

Pastilles which give out the scent of vanilla may be thus prepared:—Galbanum, twenty-four parts; cloves, sixteen parts; vanilla, thirty-two parts; essence of cloves, one part; and essence of vanilla, sixteen parts; all the ingredients being well powdered and mixed into a mass of mucilage of gum arabic. Liquid compositions of a similar nature may also be prepared, of which a small quantity may be poured into a saucer and ignited. A fluid of this kind may be formed of gum benzoin, thirty-two parts; gum galbanum, twenty-four parts; and bruised cloves, seventeen parts. The materials are to be well broken up into fragments and put into a stoppered bottle, with a sufficient quantity of rectified spirits of wine to dissolve the gums. The vessel must be kept in a warm place for some time, until the benzoin and galbanum are dissolved, and then the clear liquor should be decanted into another bottle, and preserved for use.—*Household Guide.*

**Magnolia Water.**

The materials must be of the best quality.

R Spirit. ext. of orange-flower pomatum.....	1 pint.
Spirit. ext. of rose pomatum..	2 “
“ “ of tuberose pomatum.....	½ “
Spirit. ext. of violet pomatum.....	½ “
Oil of lemon.....	3 drachms
“ almonds.....	10 drops.

—*Druggists' Circular.*

**Jockey-Club Bouquet.**

R Ess. iridis.....	3 v.
Ess. cassiæ.....	} 3 x.
Ess. tuberose.....	
Ess. ambergris.....	
Ol. bergami.....	3 ss.
Otto of rose.....	3 i.
S. V. R.....	3 xiv.

**M.** The *Ess. iridis* is made by adding 1 pint of S. V. R. to a pound of orris root in coarse powder, allowing to stand a month, and pressing off, or by percolation.—*Year-Book of Pharmacy.*

### A Wash to remove Grease and other Spots.

The following recipes are based on different principles, the one to remove the spots by dissolving the grease, the other by first acting on it chemically:—

Take of Benzine.....20 oz.  
Alcohol (strong)..... 5 "  
Ether..... 2 dra.  
Ammonia..... 1 dr.

#### Javelle Water.

Take of Bleaching powder..... 1 oz.  
Carbonate of potassa... 1 "  
Water.....83 "

Triturate the bleaching powder in the cold with 25 ounces of water, then add the carbonate of potassa, previously dissolved in the rest of the water, shake well and let it settle. The supernatant liquor is filtered if necessary, and mixed with one ounce of hydrochloric acid, when it is ready for use.—*Druggists' Circular.*

### Pomatum for Chapped Lips.

Take of Lard.....16 parts.  
Cacao oil.....24 "  
Spermaceti..... 8 "  
Yellow wax..... 3 "  
Alcanneæ root..... 1 "

The substances are fused for a quarter of an hour at a gentle heat, then strained through a cloth and mixed with

Oil of lemon,  
Oil of bergamot.  $\mathfrak{z}$ ..... $\frac{1}{2}$  part.  
Oil of bitter Almonds..... $\frac{1}{4}$  "

When the mass is poured into suitable vessels to cool.

### Wash for the Gums—Eau Dentifrice—(Eau de Botot.)

This is a French preparation, as the name indicates, and is put up in the following way:—

Take of Anise-seed..... 80 parts  
Cloves,  
Cinnamon,  $\mathfrak{z}\mathfrak{z}$ ..... 20 "  
Oil of peppermint.... 10 "  
Cochineal..... 5 "  
Vanilla..... 1 "  
Rectified spirits.....800 "  
Rose-water.....200 "

Digest for about a week and filter; then add of Essence of amber..... 1 part. A few drops in a glass of water, to rinse the mouth with.—*Druggists' Circular.*

### Castor Oil and Glycerine Pomatum.

R. Cereæ albæ..... $\frac{3}{4}$  iss.  
Glycerinæ..... 3 ij.  
Ol. ricini..... $\frac{3}{4}$  xij.  
Ess. limonis..... 3 v.  
Ess. bergam. .... 3 ij.  
Ess. lavandulæ..... 3 i.  
Ol. caryophyl.....gtt x.  
Annatto..... gr. x.  
Spirit. rect. }  
Aque destil. } ..... $\mathfrak{z}\mathfrak{z}$  q. s.

By a moderate heat dissolve the wax in a small portion of the castor-oil (one-fourth), and triturate it with the remainder of the oil and the glycerine till quite cool; then add the volatile oil and essences. Lastly, rub the annatto with a drachm of water till smoothly suspended, add a drachm of alcohol, and stir the coloring into the pomade till it is thoroughly mixed. Avoid much heat.

### Preparation for the Cure of Baldness.

Rum.....500 parts.  
Alcohol..... 75 "  
Distilled water..... 75 "  
Tincture of cantharides..... 8 "  
Carbonate of potash..... 3 "  
Carbonate of ammonia..... 5 "

Mix the liquids after having dissolved the salts, and filter. After the skin of the head has been wetted with this preparation for several minutes, it should be washed with water.—*Journal de Pharmacie.*

### Liquid Glue.

F. W. S. says (*Sci. American*): "Fill a vessel (I use a glass jar) with broken up glue of best quality, then fill it with acetic acid. Keep it in hot water for a few hours, until the glue is all melted, and you will have an excellent glue always ready."

### Ganteine for Cleaning Kid Gloves.

White soap.....250 parts.  
Water.....155 "

Dissolve with heat, cool, and add—

Eau de Javelle.....165 parts.  
Solution of ammonia..... 10 "

The whole to be ground together until a smooth paste is formed. A little of this is rubbed over the glove with a piece of flannel.—*New York Druggists' Circular*.

### Cement for Marble.

Sift plaster-of-Paris through muslin, and mix it with shellac dissolved in alcohol or naphtha. As soon as mixed apply quickly, and squeeze out as much of the composition as possible, wiping off that which squeezes out before it sets. The cement will hold better if the parts to be joined be roughened by a pointed tool before cementing. This can be done without breaking off the edges of the fractured parts. Plaster-of-Paris used with white of egg also makes a good cement, but it must be used with expedition.—*Sci. American*.

### To make Artificial Marble for Paper Weights or Other Fancy Articles.

Soak plaster-of-Paris in a solution of alum; bake it in an oven, and then grind it to a powder. In using, mix it with water, and to produce the clouds and veins stir in any *dry* color you wish; this will become very hard, and is susceptible of a very high polish.—*Sci. American*.

### New Bleaching Liquid.

A new substance for bleaching wool and silk, according to a French patent of Frezon, very efficiently replaces the old process. This mixture answers well for silk in all states, and also for raw, spun, or woven wool. It is composed of 4 lbs. oxalic acid, 4 lbs. common salt, and 200 quarts of water. The goods are placed therein for one hour, and then washed in the river.—*Technologist*, May, 1871, from *Musterzeitung für Faerberer*, 1870.

### Cement for Glass Syringes.

Resin, two parts; gutta-percha, one part; melt together over a slow fire, apply hot, and trim with a hot knife.—*Ibid*.

### To remove Nitrate of Silver Stains from Cloth.

Nitrate of silver stains are most effectually removed from white cotton or linen cloth by applying to it a dilute solution of permanganate of potash and hydrochloric acid, which is to be followed by washing with hypophosphite of soda and plain water. This process renders the use of the highly poisonous cyanide of potassium unnecessary.—*Journal of Applied Chemistry*.

### The Effect of Climate and Soil on Plants.

As an example of the effect of a tropical climate and soil on British cultivated plants and their products, may be mentioned the fact of the introduction of some peppermint plants from the Mitcham fields into a plantation at Singapore. After being planted in their new tropical home, in a situation fully exposed to the sun, they grew very well, but not to the height they grow in this country; moreover, they refused to flower, and almost as soon as they had arrived at full growth they dried up, having an appearance of being burnt. They were also found to yield not more than half the usual quantity of essential oil, and that of a dark claret color and of an inferior odor.—*Gardeners' Chronicle*.

## New Quantitative Test for Sugar in Urine.

### Knapp's Solution.

M. C. Knapp proposes, in the following formula, to take advantage of the power of glucose to completely reduce an alkaline solution of mercury:—

Take of pure dry cyanide of mercury,  
x. grammes.

Water, q. s.

Solution of caustic soda (sp. gr. 1.145), 100 cubic cent.

Dissolve the cyanide in such quantity of water, that when the solution is added it will make one litre.

In testing, take 100 cubic centimetres of this solution and add sufficient of the urine to completely reduce the mercury. The amount of glucose contained in such quantity will be 100 milligrammes. In order to know when the mercury is completely reduced, as the urine is carefully added, a drop of the fluid should from time to time be put on white paper, and a little weak solution of sulphuret of ammonia be added; if the mercury has not been fully reduced the drop will be turned brown.

This test is said to be better than that of Fehling, because the fluid is absolutely permanent and more easily prepared, and the application is quicker and easier.—*Bulletin Général de Thérap.*, Oct. 30, 1871.

### A very Hard Cement.

Some workmen having used Portland cement, mixed with finely divided cast or wrought iron filings, in the gardens of Rev. F. Moigno, the latter has noticed that the cement has become so intensely hard that it cannot be broken with a hammer or pick.—*Les Mondes*, Aug. 24, 1871.

### Parchment-Paper.

The use of parchment paper for the preparation of deeds and other purposes is increasing very rapidly, and is replacing the genuine parchment in a great many of its applications. An improved method of preparing this substance, according to a late article, consists in using the commer-

cial oil of vitriol in an undiluted state. The paper is first pressed through a solution of alum, and thoroughly dried, previous to its immersion, thus preventing any undue action of the corrosive principle of the vitriol. After the application of the acid the paper is passed into a vat of water, and then through an alkaline bath, to be again washed. Written and printed paper may undergo this improved process without materially affecting the clearness and distinctness of the letters, and the paper retains all its qualities, even after being wetted several times in succession, while paper prepared in the ordinary manner loses, to a great extent, its pliability and becomes hard and stiff.—*Harper's Monthly*.

### New Pharaoh's Serpents.

A mixture, which in burning gives the same appearance as the sulphocyanide of mercury, without being accompanied by similar noxious fumes, can be made by an intimate mixture of two parts acid chromate of potash, one part nitrate of potash, and three parts of white loaf sugar. After mixing, this should be moulded into pastilles of suitable shape and size, and kept away from light in a dry place. If they are to be kept for some time, they should be covered with a thin coat of gum-sandarach. A small amount of Peru balsam gives them a delightful odor when burning. The resulting ash, in the form of a serpent, is said to be an excellent polishing powder.—*American Chemist*.

### Arsenical Soap for the Preservation of Bird and other Skins.

Take of Arsenious acid . . . . 32 parts.  
Dried carbonate of  
potash . . . . . 12 "  
Water . . . . . 32 "  
White Castile soap . 32 "  
Pulverized quicklime 4 "  
Powdered camphor . . 1 "

Dissolve the arsenic and potash in the water boiling, and add the soap; allow to cool, and rub the camphor and lime in, in a mortar.—*French Codes*.

### Brunetti's Method of Preserving Cadaver or Anatomical parts.

1. Injection of pure water, to wash out the vessels.
2. Injection of Alcohol at 80°, to drive out the water.
3. Injection of ether, to dissolve the fat.
4. Injection of a 10 to 15 per cent. solution of tannin.
5. Desiccation by injection of hot air.

—*Dr. Jeannel's Formulaire Officiel et Magistral.*

### To Make Soup Tablets.

The *Chemical News* gives us, from the German Manuals of Pharmacy, the following receipt, by Reinsch, for making the soup tablets so much in use in the German army during the late war. The formula is as follows:—

Take eleven parts by weight of good suet, melt it in an iron pan, and make it very hot, so as to begin to brown; add, while keeping the fat stirred, eighteen parts of rye meal, and continue heating and stirring so as to make the mass brown; add then four parts of dried salt, and two parts of coarsely pulverized caraway-seed. The mixture is then poured into tin pans, somewhat like those used for making chocolate into cakes. The cakes have the appearance of chocolate, and are chiefly intended for the use of soldiers while in the field. A quantity of about one ounce of this preparation is sufficient to yield, when boiled with some water, a ration of good soup, and in case of need the cakes, being agreeable to the taste, may be eaten raw.

### Solvents for Indigo.

The extensive employment of indigo makes a new solvent of importance. In the first place, Venetian turpentine, heated to the point of ebullition, dissolves indigo with the same blue color as does sulphuric acid or aniline. After cooling, mag-

nificent copper-red crystals separate. The crystals can easily be freed from the solvent by ether or alcohol. Boiling paraffin is an equally good solvent. A somewhat dilute solution of indigo in paraffin can with difficulty be distinguished from alcoholic solution of fuchsine. Petroleum dissolves indigo with carmine red solution; so also spermaceti and stearic acid, the first with carmine violet, the last with blue color.—*Druggists' Circular.*

### To Filter Alcohol.

The following method of filtering alcohol, or its solutions, is said to be very satisfactory, and is used extensively in North Germany, where it constitutes one of the secrets of the trade. Clean, un-sized paper (Swedish filtering paper is the best) is to be torn into shreds and stirred into the liquid to be clarified. The whole is then to be strained through a flannel bag, when the resulting liquid will be found to possess the utmost clearness and limpidity. A filter may also be made by spreading paper-pulp evenly upon stretched flannel or woollen cloth. When dry, the cloth so coated will be found to give better results than the felts, etc., commonly employed as filters.—*Druggists' Circular.*

### To get rid of Ants from a Dwelling.

Take a large sponge, wash it thoroughly, and dry it. Then place it near the ants' hive, and sprinkle white sugar on it. The ants will soon collect on it, and make their nests in it. When they have settled, the sponge may be thrown in hot water, and the ants killed by thousands. By a repetition of this, any place can be readily cleared of these vermin.—*Zeitschrift des Allgem. Oesterr. Apotheker-Vereines.*

### Chinese Varnish.

Dr. V. Scherzer states, in the *Bayerische Industrie und Gewerbe Blatt*, May, 1871,

that the Chinese make a varnish, to which they give the name of *Schioliao*, in the following manner: Three parts of previously defibrinated fresh blood are mixed with four parts of lime and a little powdered alum. The result is the formation of a thick glutinous mass, which is ready for use at once. It is chiefly used for hardening the surface of wood, and rendering it perfectly water-tight. Dr. Scherzer states that he has seen straw bags made so tight with it as to be used for holding oil, whilst thin mill-board painted with it becomes as hard as wood.—*Chemical News*, Aug. 25, 1871.

### Preventives for the Ignition of Woven Fabrics.

A. Patua recommends the following in the *Buyer. Indust. und Gewerbe Blatt*: Water, twenty parts; borax, three; and sulphate of magnesia, two and a quarter parts. These salts are only to be mixed just previous to their use. The muslins or other fabrics are thoroughly impregnated with the solution, then wrung out, hung up until nearly dry, and then ironed.—*Chemical News*.

### Cologne Water.

Take of Oil of bergamot.....	4 parts.
Essential oil of cinnamon.....	1 "
Essential oil of lemon.....	4 "
"    "    citron	
(Citrus Medica)....	4 "
Essential oil of lavender.....	2 "
Essential oil of orange-flowers.....	2 "
Essential oil of rosemary.....	2 "
Alcohol, at 90°.....	480 "
Spirits of rosemary...	40 "
Compound spirits of balm (Melissa Officinalis).....	60 "

Mix, and allow to stand for eight days. Distil until 464 parts of spirits are obtained.—*French Codex*.

### Improved Mixtures for Red, Green, and Blue Bengal Lights.

J. N. Braunschweizer commends the following, in the *Buyer. Ind. Gewerbe Blatt*: For red, nitrate of strontia, nine parts; shellac, three parts; chlorate of potassa, one and a half part. For green, nitrate of baryta, nine parts; shellac, three parts; chlorate of potassa, one and a half part. For blue, ammoniacal sulphate of copper, eight parts; shellac, one part; chlorate of potassa (coarsely powdered), six parts. These mixtures can be used in rooms, as they do not emit, when burning, any deleterious fumes.—*Chemical News*.

### Cologne (Dorvault's).

Take of Alcohol, at 85°.....	1,750 parts.
Essential oil of citron (C. Medica)...	12 "
Essential oil of lemon.....	40 "
Essential oil of lavender.....	6 "
Spirits of benzoin..	45 "

Mix. Allow to stand for twenty-four hours and filter.—*Jeannel's Formulaire*.

### Bouquet de la Reine d'Angleterre (Piesse).

Take of Extract of rose.....	56 parts.
"    violets.....	56 "
"    tuberoses.....	28 "
"    orange-flowers.....	14 "
Essential oil of bergamot.....	7 "

Mix and filter.—*Jeannel's Formulaire*.

### Spirits of Patchouly (Piesse).

Take of Alcohol, at 85°.....	600 parts.
Essential oil of patchouly.....	7 "
Essential oil of rose..	1 part.

Mix and filter.—*Jeannel's Formulaire*.



### Bouquet de Foin Coupé (Piesse).

Take of Extr. of Tonka bean. 113 parts.  
 Extract of geranium. 56 "  
 Extract of orange-  
 flowers. 56 "  
 Extract of rose. 56 "  
 " jasmine. 56 "  
 Spirits of rose. 56 "

Mix and filter.—*Jeannel's Formulaire.*

### Artificial Essence of Helio- trope (Marquez).

Take of Vanilla (cut in pieces). 12 parts.  
 Alcohol, at 85°. 1,000 "  
 Water of orange-  
 flower. 125 "

Macerate for eight days, then filter.—  
*Jeannel's Formulaire.*

### Sachets of Cassia.

Take of Flowers of Acacia farnesiana,  
 Powdered orris roots, equal  
 parts.

Mix.—*Jeannel's Formulaire.*

### Sachet of Lavender (Piesse).

Take of Powdered lavender. 75 parts.  
 " benzoin. 20 "  
 Essential oil of laven-  
 der. 1 part.

Mix.—*Ibid.*

### Sachet of Heliotrope (Piesse).

Take of Powdered orris root. 2,000 parts.  
 " rosa centi-  
 folia. 1,000 "  
 " tonka bean. 500 "  
 Cut vanilla bean. 250 "  
 Powdered musk. 10 "  
 Essential oil of bit-  
 ter almonds. 1 part.

Pound the musk and vanilla bean to-  
 gether, and add the rest. Pass through a  
 not close sieve. An excellent imitation of  
 heliotrope.—*Ibid.*

### Sachet à la Maréchale (Piesse).

Take of Sandal-wood. 280 parts  
 Orris root. 280 "  
 Rosa centifolia. 140 "  
 Cloves. 140 "  
 Cassia bark (Laurus  
 cassia). 140 "  
 Musk. 1 part.

Powder coarsely.—*Ibid.*

### Sachet for Perfuming Linen.

Take of Orris root,  
 Rosa centifolia, each. 125 parts  
 Orris root,  
 Nutmegs, each. 8 "  
 Grana moschata (Hi-  
 biscus abelmoschus) 15 "

Powder coarsely and mix.—*Ibid.*

### Silver Soap.

Hard Soap. 8 oz.  
 Turpentine. 1½ oz.  
 Water. 4 oz.

Boil until perfect solution, and add  
 Liq. Ammonia. 3 oz.

—*Canada Pharmaceutical Journal.*

### Method of Rendering Wooden Taps Impervious to Liquids, and Preventing their Crack- ing.

DR. E. KOPP.

The taps are placed in molten paraffine heated to from 110° to 120°; by this means the water is eliminated from the wood, and the wood becomes thoroughly impregnated with paraffine. The taps are not removed from this bath until all the aqueous vapor has been expelled, and are left, after the removal of the vessel from the fire, in the molten liquid up to the very moment the paraffine begins to solidify. Wooden taps thus prepared are very durable, do not become soaked with liquids, keep very tight, and are not liable to become mouldy. The excess of paraffine is wiped off with care, and the taps are next rubbed clean with a piece of flannel.—*Chemical News—Canada Pharm. Journal.*

### Falling of the Hair.

The most satisfactory treatment is the use of Tannin, one and a half scruples; Adipis, one oz. Oleum Sabinæ, gtt. v-xxx to one oz. Adipis has this effect still more decidedly, but causes the hair to become harsh, stiff, and of a dirty color, and has an unpleasant odor. It sometimes causes severe headache.—*Druggists' Circular*.

### Soft Soap.

Boil twenty-five pounds of fried grease in two pails of strong lye; add another pailful of hot lye also on the following day, if there is grease on the top of the soap. Afterwards add a pailful of hot water each day until the barrel is filled.—*Druggists' Circular*.

### To Prevent Polished Materials from Rusting.

The following has been tested and approved by good authorities: Put half an ounce of solid paraffine into a wide-mouthed glass bottle, and let it melt in boiling water; then add one and a half ounce of petroleum; shake the mixture, after having corked the bottle, until it becomes a cold ointment. In using, cover the metal with it, and wipe off afterwards the greater portion, so that the polish will be little affected. A thin coat is sufficient to prevent polished metals from tarnishing.—*Boston Journ. of Chem.*

### Shoe-Blacking without Acid.

From 3 to 4 lbs. of lamp-black and  $\frac{1}{2}$  lb. of bone-black are well mixed with 5 lbs. of glycerine and treacle. Meanwhile  $2\frac{1}{2}$  oz. of gutta-percha are cautiously fused in a copper or iron saucepan, and 10 oz. of olive oil added, with continual stirring, and afterwards 1 oz. of stearine. The warm mass is added to the former mixture, and then a solution of 5 oz. of gum senegal in  $1\frac{1}{2}$  lb. of water, and one drachm each of oil of rosemary and lavender may be added. For use, the blacking is diluted

with three to four parts of water. This blacking keeps the leather soft and tends to preserve it.—*Boston Journ. of Chem.*

### Bottle Wax.

The ingredients are, shellac, 2 lbs.; rosin, 4 lbs.; Venice turpentine,  $2\frac{1}{2}$  lbs.; red lead,  $1\frac{1}{2}$  lb. Melt the shellac and rosin cautiously in a bright copper pan, over a clear charcoal fire. When melted add the turpentine, and lastly, mix in the red lead. Pour into moulds, or form sticks on a warm marble plate. The gloss may be produced by polishing the sticks with a rag until they are cold.—*Boston Journ. of Chem.*

### Preventives for the Ignition of Woven Fabrics.

A. Patera recommends the use of a solution consisting of water, 20 parts; borax, 3, and sulphate of magnesia,  $2\frac{1}{2}$  parts. These salts are only to be mixed just previous to use. The muslins and other similar fabrics are thoroughly impregnated with the solution, next wrung out, and are, after having become nearly dry, ironed. The use of a mixture of sulphate of ammonia and sulphate of lime is also recommended. And, lastly, attention is called again to the application first made by Fuchs, so far back as 1823, of a solution of silicate of potassa, or soda, for rendering wood, and especially theatrical decorations, fire-proof—that is to say, preventing such from bursting into flame if accidentally ignited.—*Ibid.*

### Iron Cement.

Winkler has found that the best iron cement can be made by preparing a mixture composed of 16 parts of clean wrought-iron filings, 3 parts of pulverized sal ammoniac, and 2 parts of flowers of sulphur. This mixture can be kept in a dry package any length of time, unchanged; and when required for use, it is better to reduce one part of it with 12 parts of iron filings, and enough water, containing a little of sulphuric acid, to

form a stiff paste. When thus reduced it must be immediately applied, as it sets rapidly. The author recommends it for joining broken pieces of cast-iron, and for stopping large fractures. For very fine work, pure pulverized iron filings, such as apothecaries use, can be substituted for the coarse article.—*Sci. American*.

### To Curl Hair.

Take two ounces of borax, one drachm of powdered gum senegal, one quart of hot water (not boiling); mix, and as soon as the ingredients are dissolved, add two ounces of spirits of wine strongly impregnated with camphor; on retiring to rest, wet the hair with the above mixture and roll it in papers as usual; leave them till morning, when untwist and form into ringlets.—*Druggists' Circular*.

### To Get Rid of Flies.

In an interesting lecture in the *Philadelphia Medical Times*, by Dr. Addinell Hewson, on flies, the author states that hanging about a room branches of the May weed or wild chamomile, in flower, is sufficient to expel the flies, or even strewing the dried flowers about the room will suffice. An equally efficacious remedy is, imperfectly burning black pepper upon a hot shovel. He has also found that throwing a netting over the bed will keep out these pests, even if the meshes are an inch in size, provided there be not a window or light behind the bed.

### To Kill Lice.

In the *Philadelphia Medical Times* of Dec. 1, Dr. Louis A. Duhring states that the best method of getting rid of these vermin is to saturate the hair with coal oil, a teacupful or thereabouts being used at bed-time, after which a flannel night-cap should be put on, and in the morning the head be thoroughly washed with soap and warm water. To get rid of the nits alkaline washes and the frequent use of the fine-tooth comb must be resorted to.

[I have found that the repeated use of a strong infusion of fish-berries (*cocculus indicus*) will answer the purpose, and the application, though not so effectual, is certainly pleasanter than the plan pursued by Dr. Duhring.—*Ed. N. R.*]

### Preservative for Anatomical Specimens.

BY DR. B. TITCOMB.

First place the object in a vessel containing pure water; let it remain a few hours, or over night, then transfer it to another containing a solution of creasote, f 3 ij. to f 3 xij. of water; let it remain over night, then place it in a jar or vessel containing a liquid of the following proportions:—

℞ Chloride of sodium . . . 3 iss.  
Sulphate of alumina . . . 3 iss.  
Nitrate of potassa . . . 3 vj.  
Aqua . . . . . f 3 vij.

—Trans. Am. Med. Ass., *Chicago Medical Times*.

### Powder for the Preservation of the Cadaver.

Take of light Wood saw-dust . . 50 parts.  
Powdered sulph. of zinc . 20 “  
Oil of lavender . . . . . 1 part.

Arrange the corpse in a box filled to the depth of two inches with this powder, and then cover it with the same.—*French Codex*.

### Sucquet's Powder for the Preservation of Corpses.

Sublimed sulphur,  
Powdered boracic acid, aa q. s.

About 90 lbs. (40 kil.) are required for an adult corpse, to be used as last formula.—*Jeannel's Formulaire*.

### Vafflard's Powder.

Impure carbolic acid . . 4 parts.  
Sawdust . . . . . 16 “

Mix intimately. To be used as last formula. According to the official report of

the Parisian authorities a body immersed in this powder gradually dries without putrefaction. About 90 lbs. are required for an adult corpse.—*Ibid.*

### Mixture for the Preservation of Anatomical Pieces.

Take of Glycerine.....14 parts.  
Brown sugar..... 2 "  
Nitrate of potash..... 1 part.

Mix. After a maceration of some days' duration the pieces become rigid, but recover their suppleness on exposure to a dry, warm air, and when they are dry may be varnished. The duration of maceration depends upon the size of the piece; eight days is enough for a hand.—*Ibid.*

### Solution of Chloride of Zinc for Preserving the Cadaver.

Chloride of zinc...1 part (or a little more);  
Distilled water...2 parts.

Dissolve. Inject into body. Good, but alters color.—*Ibid.*

### Solution of Sulphate of Zinc and Alumina for Preserving the Cadaver.

Take of Sulphate of alumina (free from iron).....60 parts.  
Water.....40 "  
Oxide of zinc..... 6 "

Mix. Dissolve with heat. Filter, and evaporate until a specific gravity of 135 is obtained. Said to be very efficacious when used as an injection into the cadaver.—*French Codex.*

### Cleaning Glass Vessels in which Petroleum has been kept.

In Dingler's *Polytechnisches Journal* the following method is given for this purpose:—Wash the vessel with thin milk of lime, which forms an emulsion with the petroleum, and removes every trace of it, and by washing a second time with milk of lime and a small quantity of chloride

of lime, even the smell may be so completely removed as to render the vessel thus cleansed fit for keeping beer in. If the milk of lime be used warm, instead of cold, the operation is rendered much more effective.—*Chemist and Druggist.*

### Lute for Corks, etc.

Anthracene acts capitally as a substitute for paraffine (either by itself or mixed with the latter) in covering corks or joints of apparatus required to stand a comparatively high temperature. A luting of anthracene is capable of standing a high pressure and temperature combined for a lengthened period.—ROBERT F. SMITH, *Chem. News.*

### Marking Ink for Parcels.

If you dissolve asphaltum, grahamite, albertite, or any mineral of this character, in naphtha or oil of turpentine to a thin fluid, you will obtain an ink to answer all your purposes, viz., to dry quickly, not to spread, and the markings to be nearly indestructible.—*Chemist and Druggist.*

### Extract of Ambergris (Piesse).

Take of Spirit of rose.....250 parts.  
Spirit of ambergris...500 "  
Spirit of musk *TRUB.*...125 "  
Spirit of vanilla..... 56 "

Mix and filter. A very persistent perfume.—*Ibid.*

### Spirit of Vanilla (Piesse).

Take of Vanilla in small pieces...6 parts.  
Alcohol at 85°.....100 "

Macerate for a month, express and filter.—*Ibid.*

### Essence of Ambergris.

Ambergris.....1 part.  
Musk.....1 "  
Sulphuric ether and alcohol mixed...70 "

Macerate for two days and filter. A very persistent perfume.—*Jeannel's Formulaire.*

### Compound Spirit of Ambergris and Musk. Guibourt's Royal Essence for the Handkerchief.

This very persistent perfume is made according to the following:—

Take of Ambergris.....	25 parts.
Musk.....	12 “
Civet (vivera civetta)..	5 “
Oil of rose.....	2 “
Oil of cinnamon (laurus cinnamomum)...	3 “
Oil of Wood of Rhodes (convolvulus scoparius).....	2 “
Oil of orange flowers (citrus aurantium)...	2 “
Carbonate of potash...	6 “
Alcohol at 90°.....	860 “

Macerate for fifteen days and filter.—*Ibid.*

### Artificial Extract of Carnations (Piesse).

Take of Spirit of oil of roses...	56 parts.
Spirit of orange flowers.	28 “
Spirit of acacia farnesiana.....	28 “
Spirit of vanilla.....	11 “
Oil of cloves.....	1 “

Mix and filter.—*Ibid.*

### Eau de Portugal (Piesse).

Take of Alcohol at 85°.....	600 parts.
Oil of orange (citrus aurantium).....	32 “
Oil of citron (citrus limon).....	8 “
Oil of bergamot (citrus limetta).....	4 “
Oil of rose (rosa centifolia).....	1 “

Mix and filter.—*Jeannel's Formulaire.*

### Lavender Water (Piesse).

Take of Oil of English lavender,	23 parts.
Alcohol at 85°.....	680 “
Rose water.....	55 “

Mix and filter.—*Ibid.*

### Lavender Water (Smith).

Take of Oil of lavender.....	6 parts
Spirit of Amber (gris?)	3 “
Cologne.....	50 “
Alcohol at 85°.....	100 “

Mix and filter.—*Ibid.*

### Compound Spirit of Musk (Piesse).

Take of Spirit of musk $\frac{1}{1000}$ .....	4 parts.
Spirit of ambergris.....	2 “
Spirit of rose.....	1 “

Mix and filter.

### The Spirit of Ambergris

Is made as follows:

Take of Alcohol at 85°...	800 parts.
Ambergris.....	17 “

Macerate for a month, agitating from time to time, and filter.

### The Spirit of Musk

Of the French Codex is made as follows:

Take of Musk-pods.....	1 part.
Alcohol at 80°.....	10 “

Macerate for ten days, express and filter.—*Ibid.*

### Curry Powder.

In the *Food Journal* of December 1, 1871, Wm. Cochran endorses the following recipe as affording the closest approach to a Singapore Curry Powder that can be obtained outside of the Tropics:—

1 cocoanut and 1 lime sliced.	
Cardamoms, thoroughly ground...	2 ozs.
Cinnamon, “ “	2 “
Chilies, “ “	1 “
Coriander seed, “ “	4 “
Black pepper, “ “	4 “
Mustard seed “ “	2 “
Turmeric, “ “	5 “
Ginger, “ “	4 “

### On Cooking of Food at below 212° F. or 100° C.

M. JEANNEL, in a communication to the French Academy, arrives at the following conclusions:—

“1. The boiling of water in which

meat is cooked to make broth, or in which vegetables are prepared for the table, has no advantage other than that of showing, by the escape of steam,—a phenomenon which attracts the attention even of the most ignorant,—that the fire is sufficient to insure the cooking of the food; but, on the other hand, continued boiling during the process of cooking has two disadvantages: First, the aromatic principles carried off by the steam are dissipated in the atmosphere, and the flavor of the food is thus diminished. Secondly, a very considerable amount of fuel is wasted.

"2. Meat and vegetables, either fresh or desiccated, can be cooked at a temperature of  $+95^{\circ}$ .

"3. Cooking at  $+95^{\circ}$  requires a little more time than cooking at the boiling-point under the pressure of 0<sup>mm</sup>.76 in the proportion of sixteen to fifteen or fourteen for beef broth, and in that of about five to four for potatoes or desiccated vegetables.

"4. As regards the consumption of fuel, there is an economy of about forty per cent. when the cooking is done in an ordinary stove.

"5. The broth and the meat are much more palatable when they have been cooked at a temperature of  $+95^{\circ}$  and without more boiling than is necessary for scumming, and for this purpose the term of boiling need not exceed fifteen minutes.

"6. By cooking at  $+95^{\circ}$  the yield of the cooked meat is increased by from three to six per cent.

"7. By cooking at  $+95^{\circ}$  the yield of broth is increased ten per cent., so that the same quantity of broth may be obtained as when the temperature is raised to  $100^{\circ}$ , with ten per cent. less water.

"8. It would be easy for the head cook in a large establishment to regulate the heat in their saucepans by thermometers and registers. Where the cooking is done by gas this is exceedingly easy.

"9. The thermometer (which should

be of the description used by sugar-refiners and brewers, and which may be obtained of any of the opticians in Paris) should be protected from injury by being encased in a fenestrated covering of metal, leaving the scale uncovered at the upper part, so that when the thermometer is hung by a hook to the edge of the saucepan, its scale can be seen through an orifice or a notch made in the lid. The damper of the stove should be shut as soon as the temperature approaches  $+100^{\circ}$ : and opened whenever it tends to fall below  $+95^{\circ}$ ."

NOTE.—After skimming the *pot-au-feu* and adding vegetables and spices, the boiling saucepan should be placed in a box, the inside of which, as well as the cowskin lid, is lined with a layer (ten centimetres in thickness) of coarse woollen stuff. Thus shut up in a non-conductor of heat, the saucepan cools very slowly. At the end of five minutes the temperature of the water is still  $+70$ , the bouillon is made, and the meat, vegetables, and spices are cooked without the loss of any of their aromatic principles by evaporation. Such is the Norwegian saucepan, the use of which cannot be too highly recommended.—*Philadelphia Med. Times*, Jan. 1, 1871.

### Metallic Soap.

Metallic soap in linseed-oil is highly recommended for coating canvas for wagon covers, tents, etc., as being not only impermeable to moisture, but remaining pliable for a long time without breaking. It can be made with little expense, as follows: Soft soap is to be dissolved in hot water, and a solution of sulphate of iron added. The sulphuric acid combines with the potash of the soap, and the oxide of iron is precipitated with the fatty acid as insoluble iron-soap. This is washed and dried, and mixed with linseed-oil. The addition of dissolved India-rubber to the oil greatly improves the paint.—*Harper's Monthly*.

### Recipe for Acute Indigestion in Horses.

In the Philadelphia *Practical Farmer* of February 1, J. Michener, V. S., states that if horses are over-fed, especially after an exhausting drive, they are very liable to acute indigestion, and offer very serious symptoms, prominent among which is foul, sour breath. In these cases he has found the following to act as a specific:—

B Aloes.....4 drachms.  
Capsicum .....4 “  
Soda, Bicarb.....4 “

Mix and dissolve in half a pint of hot water.

Administer at once.

### Graham Bread.

*Graham Flour.*—The wheat must be of the best quality, and either run through a smut-mill, or washed and dried before grinding. It should be ground rather coarser than common flour, and used without bolting. It takes more wetting than fine flour. For every loaf allow three large tablespoonfuls of molasses, one quart of wetting, a tablespoonful of salt, three tablespoonfuls of brewer's yeast. Mix the yeast, molasses, and salt in the wetting, add half a teaspoonful of soda, and mix in as much coarse flour as can possibly be stirred in with a spoon. Now knead the bread briskly until it cleaves from the hand. Put the loaves in the pan and put it in place and shape. If made with home-made yeast sponge the bread, and add the molasses and other wetting after the sponge rises. Knead until the dough cleaves from the hands; set it in a warm place until it rises. When light, knead it again as before, and put it in the pans to rise. Add no flour after the first mixing; the dough will not be stiff enough to form into loaves. Shape the loaves after they are in the pan with the hand.—*Philadelphia Practical Farmer.*

### Dr. Maddox's Method of Clearing Diatoms.

Dissolve 40 grains of crushed chlorate of potash in water, with the addition of one and a half drachms of hydrochloric acid, the whole to be placed in a three-ounce vial, and closed with a wax cork. The diatoms are to be immersed in this for a suitable length of time, and subsequently washed in water.

### Ointment for Gun-Barrels on the Sea-shore.

It is said that an ointment made of corrosive sublimate and lard will prove an effectual protection against the rusting of gun-barrels on the sea-shore.—*Harper's Monthly.*

### Sugar Determination in Urine.

Professor Seegen read a paper before the Medical Society of Vienna on “Sugar Determination,” in which he first detailed the importance to the physician of proving the presence of sugar in urine, and then dwelt upon the contradictory results of existing methods of analysis, especially in regard to the presence of sugar in many physiological conditions, as, for instance, during pregnancy, and during the period of suckling, after inhalation of chloroform and ether, etc. The author was thereby induced to test all existing methods, and he arrived at the following results:—

We have no re-agent to prove minute traces of sugar dissolved in urine beyond doubt, and to the exclusion of other analogous substances.

All statements as to the presence of minute quantities of sugar in many physiological and pathological conditions must be received with caution.

Normal urine does not contain it in sufficiently large quantities to allow of its determination.

Normal urine contains minute quantities of reducing substances, but whether

they consist of sugar, partially or wholly, cannot be determined with our known tests.

*Albuminous Urine and a New Reagent.*—The precipitate obtained by heating urine with nitric acid is carefully washed to remove the last traces of urine, and it is then re-dissolved in a little potash, a few drops of Fehling's copper solution added; a fine violet coloration is instantly produced, especially with a strong solution; the reaction is very characteristic, and readily shows one per cent. of albumen.—*Philadelphia Med. and Surg. Reporter.*

### Golden Ink.

Golden ink may be made by mixing finely divided gold-leaf, or Dutch metal, with thin gum-water.—*Pharm. Jour. and Trans.*

### Transparent Cement.

A very strong transparent cement, applicable to wood, porcelain, glass, stone, etc., may be made by rubbing together in a mortar two parts of nitrate of lime, twenty-five parts of water, and twenty parts of powdered gum arabic. The surfaces to be united to be painted with the cement, and bound together until completely dry.—A. Selle in *Dingler's Polytechnisches Journ.*

### Glue for Labels.

A good cement for attaching paper labels to bottles may be made by boiling a mixture of gelatine and dextrine in water. When dry, the labels should be covered with dammar varnish.—*Dingl. Pol. Jour.*

### Methods of Preserving Meat.

The Belgian *Musée de l'Industrie* notes the following methods of preserving meat as the most deserving of attention amongst those communicated to the French Academy of Sciences, and published in its *Comptes Rendus* within the last twelve

months. 1. M. Baudet's method, by which the meat is kept in water acidulated with carbolic acid in the proportion of one to five parts of acid per thousand of water. A series of experiments proved that all kinds of meat could thus be kept fresh, for lengthened periods, without acquiring any ill taste or odor.

The meat may be placed in barrels or in air-tight tin cases, filled with acidulated water of the strength above specified, and headed up; or the pieces may be packed in barrels or cases in alternate layers with charcoal, pounded small, and saturated with water containing  $\frac{1}{1000}$  of carbolic acid. The charcoal serves as a vehicle for the antiseptic fluid, and as an absorbent of any gaseous matters given off by the meat. The latter should be wrapped in thin linen covers to prevent the charcoal working its way into the tissues.

This method, it is suggested, might be employed in curing pork in place of "salting," or of the more lengthy and costly process of "smoking;" and also for the preservation of poultry, game, butter, eggs, etc.

In the case of South American meat, M. Baudet proposes the use of large sacks of caoutchouc. The meat should be packed in them, with alternate layers of charcoal as above described, and each sack, when filled, should be hermetically closed by drawing another empty caoutchouc sack, cap-wise, over it. The caoutchouc, it is supposed, would fetch enough in the market—its low price notwithstanding—to cover expenses of packing and freight, and so permit the meat to be sold in Europe at a very small advance on cost price. If intended for use a second time, the empty bags should be steeped in boiling water for a few minutes, to remove any organic impurities adhering to them.

2. M. Gorge's method, which is in use in La Plata, consists in washing and drying the meat, and afterwards steeping in successive waters containing hydrochloric acid and sulphite of soda, and then pack-



ing it in air-tight cases holding one, five, or ten kilog. each. Meat thus treated requires to be soaked in warm water for about half an hour before use.

3. M. Leon Soubeiran has recommended braying and drying, in the fashion adopted by the Chinese and Mongols, and described by M. Simon, French Consul in China, in a communication made by him to the *Société d'Acclimatation*. The pemmican of our Arctic voyagers, and the *charqui* of South America, are familiar examples of meat preserved by analogous processes. The late M. Payen, a distinguished member of the Academy, insisted upon the great perfection to which this system might be carried by the aid of hot air stoves and suitable apparatus.—*Food Journal*, Jan. 1, 1872.

### How to Prevent the Rusting of Steel Instruments.

A correspondent confidently recommends equal parts of carbolic acid and olive oil, smeared over the surface of the instruments, as an unfailing preventive of rust in any climate. He states that it is a plan much used by medical officers in the navy, and it is found to preserve the burnish and brightness of the steel, however moist and warm the atmosphere may be. Our correspondent adds that it will also be found advantageous to have the fittings of instrument-cases made only of brass and polished wood, as the glue with which the velvet usually employed is fastened on is apt to absorb moisture and remain damp for a considerable time.—*The Lancet*.

### Fluid to Restore Putrid Tissues.

Dr. B. W. Richardson states in a lecture in the *Medical Times and Gazette* of December 9, 1871, that if the fluid constructed according to the following formula be poured on a soft, putrid tissue it becomes firm and inoffensive, so that it can be readily dissected, and may be so preserved indefinitely in the fluid.

Take of Iodine..... 3j.  
Methylated ether, sp. gr.  
.720..... f 3 x.  
Absolute alcohol..... f 3 j.  
Strong sulphuric acid.... f 3 iv.  
Dissolve the iodine in the ether and alcohol mixed together, then slowly drop in the sulphuric acid.

### To Detect Wool in Silk.

Put the tissue into a solution of caustic potash, in which previously oxide of lead has been dissolved; woollen fibres turn black, silk do not.—*Moniteur Scientifique*.

### Sulphuret of Cadmium for Coloring Soap.

According to E. Schering (*Dingler's Polytechn. Jour.*) sulphuret of cadmium makes the finest, most durable, and cheapest yellow color for soap yet discovered. The sulphuret must first be rubbed up with some oil, and this mixture well incorporated by stirring it with the hot liquid soap.

### Mehu's Solution for Preservation of Anatomical Specimens.

Take of Arsenious acid..... 20 parts.  
Crystallized carbolic  
acid..... 10 "  
Water..... 700 "  
Alcohol..... 300 "

Put the whole of the arsenic in a retort, and upon it put half the alcohol and a third of the water, and bring the whole to the boiling point. Nearly all the arsenic at once dissolves; filter, and add at once more water to the filtrate. The remaining arsenic is now to be treated with the remaining alcohol and water as before, and the filtrate added to the first. To the fluid, moderately warmed, the carbolic acid is to be added with stirring.—*Schmidt's Jahrbücher*, Dec., 1871.

### Varnish for Photographs.

According to the *Zeitschrift des Allgemeinen. Oester. Apot.-Vereins*, Dec. 10, 1871, the following recipe offers a varnish which may be used on photographs, etc., which it is desired to retouch, and give a surface which will take lead pencil well, and at the same time protect the photograph itself completely:—

Take of Castor oil . . . . . 1 part.  
 Sandarac . . . . . 8 “  
 Alcohol . . . . . 18 “

Mix and dissolve.

### Detersive Paste for Removing Grease from Silk.

Rub together fine French chalk and lavender to the consistency of a thin paste, and apply thoroughly to the spots with the fingers; place a sheet of brown or blotting paper above and below the silk and smooth it with a moderately heated iron. The French chalk may then be removed by brushing.—*Leavenworth Medical Herald and Jour. of Phar.*

### Perfumed Pomade and Extract.

The author of an amusing and instructive work on perfumery asks why the ladies should not cultivate flowers for their scent as well as for their odor, and he suggests a means of obtaining heliotrope pomade which any person may put in practice. An ordinary glue-pot, made thoroughly clean, is, in fact, a *bain Marie* on a small scale. Place in the pot a pound of fine lard, and when the heliotrope flowers are in season throw them into the clarified fat. Place the glue-pot near the fire of the green-house, so as just to liquefy the lard. Let the flowers remain in the liquid for twenty-four hours; strain the fat from the spent flowers, and go on repeating the operation for a week. The result will be a pomade *à la* heliotrope. This pomade can be made into an extract by steeping the odorous fat in

highly rectified spirits. In this manner a young lady may make her own perfumes, and so get them pure, which is far from being the case at present.—*Druggists' Circular.*

### Tonic Tooth Powder.

Triturate well together one ounce of pulverized Peruvian bark, one ounce of pulverized white Castile soap, and two ounces of the best prepared chalk. It may be flavored by adding a little of the oils of wintergreen and rosemary, with the latter in a very small proportion. This powder is not only good for the teeth, but also a preventive of, and remedy for, spongy gums. Another very good tooth powder may be prepared by the addition of one ounce of pulverized orris root to the above. The addition of bole armenian to tooth powders is only for the purpose of coloring them, and is not of the slightest benefit. The Peruvian bark will impart sufficient color to this preparation.—*Ibid.*

### Dextrine Paste.

In hot water dissolve a sufficient quantity of dextrine to bring it to the consistency of honey. This forms a strong adhesive paste, will keep a long time unchanged if the water is not allowed to evaporate. Sheets of paper may be prepared for extempore labels by coating one side with the paste and allowing it to dry; when to be used, by slightly wetting the gummed side, it will adhere to glass. This paste is very useful in the office or laboratory.—*Dr. Wildman, Philadelphia Dental Times.*

### Carbolic Acid Paper.

Carbolic acid paper, which is now much used for packing fresh meats, for the purpose of preserving them against spoiling, is made by melting five parts of stearine at a gentle heat, and then stirring in thoroughly two parts of carbolic acid; after which five parts of melted

paraffin are to be added. The whole is to be well stirred together until it cools; after which it is melted and applied with a brush to the paper, in quires, in the same way as in preparing the waxed paper so much used in Europe for wrapping various articles.

### **Inextinguishable Lamp.**

A new light, which seems fitted to be of use in submarine construction of works, is in use in England. It is a cylinder of tin, with a top filled with a phosphite of calcium, prepared by the inventor, a Mr. Holmes. When the lamp is thrown into the sea or river, the water, entering the cylinder, decomposes the phosphite of calcium, phosphuretted hydrogen results; the latter escaping in great quantities ignites spontaneously, and burns with a brilliant light.—*Scientific American*.

### **Labels for Damp Situations.**

Quevenne recommended to write on the back of adhesive plaster. This kind of labels sticks eternally, so to speak.—*Druggists' Circular*.

### **Waterproofing Linen, Canvas, etc.**

The following directions for waterproofing canvas and similar articles for tents, covers, etc., are given by H. Kuhr. The material is taken successively through a bath of sulphate of alumina, of soap, and of water; it is then dried and smothered or calendered. For the alumina bath, use the ordinary neutral sulphate of alumina of commerce (concentrated alum cake), dissolving one pint in ten of water, which is done easily without the application of heat. The soap is best prepared in this manner: Boil one part of light rosin, one part soda crystals, and ten of water, till the alum is dissolved; salt the soap out by the addition of one-third part of common salt; dissolve this soap with an equal amount

of good palm-oil soap in thirty parts of water. The soap bath should be kept hot while the goods are passing through it. It is best to have three vats alongside of each other, and by a special arrangement to keep the goods down in the baths. Special care should be taken to have the fabric thoroughly soaked in the alumina bath.

In a note to the above, Drs. Hager and Jacobsen remark that during the last few years very good and cheap waterproof goods of this description have been manufactured in Berlin, which they believed is effected by steeping them first in a bath of sulphate of alumina and of copper, and then into one of water-glass and rosin soap.

### **Method of Obtaining the Fresh Juice of Fruits.**

M. N. Gränger states that the following process affords a clear juice of very fine color, taste, and aroma.

**Raspberries.**—Take the fruit well ripened and cleaned, crush them in a glass vessel with a wooden pestle into a homogeneous mass, add to them five to ten parts per one hundred of cane or grape sugar, and allow the whole to stand, mixing up occasionally. By means of the alcohol resulting from the fermentation the pectin is precipitated, and a clear juice is obtained, preserving perfectly the aroma and taste of the raspberry.

**Strawberries.**—Put two parts of clean strawberries, without crushing them, into a large-mouthed jar; add to it two-and-a-half parts of sugar, and agitate very frequently at the ordinary temperature without heating. The sugar gradually extracts the juice of the fruit, which are left tasteless and odorless, and forms a clear syrup, which is readily separated by means of a flannel strainer, and must be mixed with one-fifth part of alcohol. The raspberry juice has a very delicate odor, but will not bear the least heat without destroying its taste.—*L'Union Pharmaceutique*.

### Hydrofugine.

A substance called hydrofugine has recently been brought into use for the purpose of rendering fabrics waterproof, without interfering with the circulation of the air through them. The method of preparing the compound is as follows: In one of two pans, each of a capacity of about five gallons, place twenty pounds of sulphate of alumina cut in thin slices; into the other pour eight pounds of oleic acid, and about a gallon and a half of alcohol. Stir in order to properly mix them, and then pour gradually the contents of the second pan into the first, stirring all the time with a wooden pallet for about twenty minutes. When the mixture is complete, allow it to settle for about twenty-four hours. The alcohol and the oleic acid, which floats on the top, can be poured off, and the precipitate is placed in a felt filter, and submitted to a strong pressure in order to obtain a solid cake. This cake is removed and dried in a moderately hot stove, and afterwards reduced to powder. This powder is prepared for use for woollen fabrics by mixing and dissolving one pound in about twenty gallons of water. For silk, linen, and other fabrics, one and a half pounds of the powder will be required for every twenty gallons of water. The solutions are to be passed through a sieve before dipping the fabrics, which should be completely saturated and afterward removed and dried, when, it is asserted, they will be found to be impervious to water, but not to air.—*Med. and Surg. Reporter.*

### To Determine the Value of Cochineal.

BY DR. CRACE CULVERT.

It is often advisable before buying cochineal to determine its tinctorial power. This may be ascertained by two or three methods. In the first, equal weights of the cochineal to be assayed, and of one of known value, are treated with alcohol or a solution of alum. The solutions thus obtained are poured into

tubes and placed in a colorimeter. This is an oblong box, which has two apertures at each end and two on the top, in a direct line with the end apertures. The tubes are placed through the openings on the top, and on looking through the end apertures, any difference in intensity of color between the two liquids can be observed. If a difference is detected, alcohol or water is added to the stronger liquor until there is perfect uniformity of tint. According to the amount of dilution required is the relative value of the cochineals.

A good process was published by the late Dr. Penny, of Glasgow. It consists in exhausting a gramme of cochineal with fifty grammes of potash solution, and this extract is further diluted with one hundred grammes of water. The solution thus obtained is mixed with a graduated solution of ferricyanide of potassium (one gramme of salt to 200 grammes of water) till its color changes to a dark brown. A solution of bleaching-powder of known strength can also be used for the same purpose. The best method consists in dyeing equal surfaces of flannel in a bath composed as follows:—

#### *For Scarlet Tints.*

Water.....	1250	gramms.
Cream of Tartar...	2	"
Tin Composition...	2	"
Cochineal .....	1	"

#### *For Crimson Tints.*

Water.....	1250	grams.
Cream of Tartar.....	0.75	"
Alum .....	1.60	"
Cochineal.....	1	"

The pieces are then washed and dried, and by a comparison of the relative intensity of shade the value of the cochineal is determined.—*London Pharm. Journ.*, Dec. 2, 1871.

### To Remove Tar, Turpentine, etc.

Dr. A. D. Binkend gives the following receipt in the *Philadelphia Med. and Surg. Report*, as being very efficacious:—

*For Cleansing Glass.*—An amalgam of the pulverized extract of licorice and oil of aniseed. This seems to combine with the turpentine, and it may then be rubbed dry and clean with a pledget of cotton.

For cleansing tar or pitch from the skin, make the mixture about the consistency of thick cream, and rub on thoroughly with the hand; then follow with a piece of good soap, a sponge, and warm, soft water.

### To Coat Metallic Objects with a very fine Permanent Black.

On a bottom of a cylindrical cast-iron varnish-vessel, eighteen inches high, a layer one-half inch thick of coal dust; upon this is placed an iron grating, and thereon are put the iron, steel, or other metallic object to be coated. The vessel, after closure with a tight lid, is next placed on a coke fire and heated for about a quarter of an hour, just to incipient red heat. The vessel is then taken off, and the lid being removed after about ten minutes, the metallic objects will be coated with a very uniform, durable varnish, which resists bending and a high temperature without cracking. Very small objects, like hooks and eyes, are better placed along with some coal dust in a coffee-roasting apparatus, and this turned as is usual in the roasting of coffee until the metallic objects have received a uniform coating of the right depth of color.—*Chemical News*, Nov. 3, 1871.

### Vienna Yeast.

DR. VIGLA.

Previously-malted barley, maize, and rye are ground and mixed; next put into water at from 65° to 75° F.; after some hours the sweet liquid is decanted from the dregs and caused to ferment by some yeast. The fermentation becomes very strong and the yeast globules are carried to the surface, forming a scum which is

skimmed off, placed on cloth-filters, drained, washed with a little distilled water, and pressed into any desired shape by means of strong hydraulic pressure and covered with tight, stoutly-woven canvas. This yeast keeps from eight to fourteen days, and produces much better bread or beer than the ordinary variety.—*Chemical News*.

### Making Wax Models.

*To make the Moulds.*—The object to be moulded from should be first brushed over with oil, into which a little tallow has been melted, all crevices being filled with common yellow soap. Mix the plaster-of-Paris in a tea-cup (as it dries very fast), and put it on the object with a knife very smoothly. If a piece of mould be long and narrow, strengthen it by means of bent wire. The plaster must be *entirely* hardened before removing from the object. After the moulds are made, if they are wetted with a strong lather of best white soap instead of water, the figure will be smoother when finished. Equal quantities of white wax and spermaceti look well for a bust. A few drops of turpentine put into wax remedy its brittleness.

*To Model the Wax.*—Put the moulds in warm water for five or ten minutes; wipe very gently with soft linen; have some white wax already melted in a pipkin, to which is added a little of Ackerman's flake-white paint (the quantity depends on the whiteness required), pour in the wax and turn about till cool. When the wax has been removed from the turpentine, pare the edges with a sharp, slightly-warmed knife, and rub smooth with a little turpentine. The object is then ready for coloring.—*London Lancet*, Dec. 9, 1871.

### Vinaigre de Bully (Auber).

Take of Cologne water.....	100 parts
Spirit of benzoin.....	1 “
Vinaigre radical.....	5 “

Mix and filter.

**Artificial Extract of Lemon Verbena (Piesse).**

Take of Alcohol at 85°.....	500 parts.
Oil of orange (citrus aurantium).....	28 “
Oil of lemon (citrus limonia).....	56 “
Oil of Andropogon nardus.....	4 “
Alcoholic extract of orange flowers.....	175 “
Alcoholic extract of tube-rose.....	175 “
Spirit of rose.....	250 “

**Mix.**

This mixture is very much esteemed, but must be made fresh frequently, as it deteriorates by keeping.—*Jeannel's Formulaire*.

**Lait Virginal.**

Take of Rose-water.....	100 parts.
Spirit of benzoin.....	1 part.

Add the rose-water gradually to spirit of benzoin, or as follows:—

Take of Rose-water.....	565 parts.
Spirit of tolu.....	7 “

Add the water little by little to the spirit.—*Ibid.*

**Vinaigre Virginal (Dorvault).**

Take of Vinegar.....at 3° B.	
Alcohol.....at 85°	
Powdered benzoin, equal parts.	

Macerate for four days, with occasional agitation, then filter.—*Ibid.*

**Viennese Cosmetic Water.**

Take of Bruised almonds.....	15 parts.
Water of orange flower.....	62 “
Water of roses.....	62 “

Rub up the almonds with the waters, allow to stand, express, and add

Borate of soda.....	1 part.
Spirit of benzoin.....	2 parts.

**Dissolve.**

A very economical and fragrant cosmetic.—*Ibid.*

**Acetic Acid Lotion for Baldness.**

Dr. H. G. Landis writes that he has found the following prescription a most serviceable and refreshing application both for baldness and as a shampoo-dressing to remove dandruff:—

Take of Acetic acid.....	f 3 j.
Cologne.....	f 3 j.
Aqua.....	ad f 3 vj.

**Mix.****Vinaigre Cosmetique.**

Take of Alcohol at 85°.....	950 parts.
Benzoin.....	94 “
English aromatic vinegar.....	31 “
Balsam of Peru.....	31 “
Oil of Neroli (citrus aurantium).....	2 “
Oil of nutmeg.....	1 “

**Mix and filter.****Vinaigre Radical (French Codex).**

Take of crystallized acetate of copper q. s. Distil in a stoneware retort provided with a long neck and a cooled receiver surmounted by a long tube until nothing comes over any longer. The acid is to be purified by redistillation in a glass retort by means of a sand bath. The more concentrated acid forms near the close of the distillation. This vinegar contains a small amount of acetone, which gives it a peculiar odor.

**English Aromatic Vinegar (French Codex).**

Take of Crystallizable acetic acid.....	1200 parts.
Camphor.....	120 “
Volatile oil of cinnamon.....	2 “
Volatile oil of cloves.....	4 “
Volatile oil of lavender.....	1 “



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